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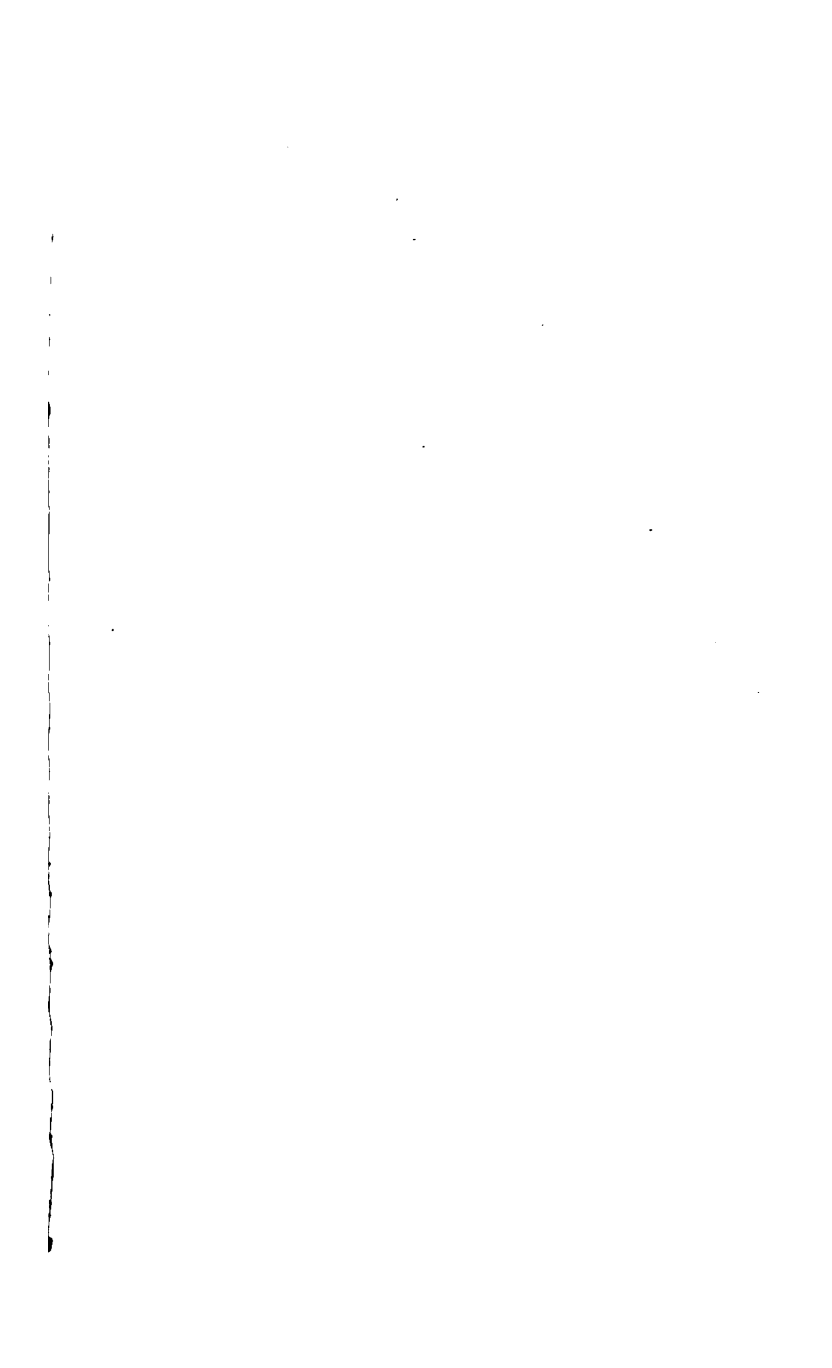
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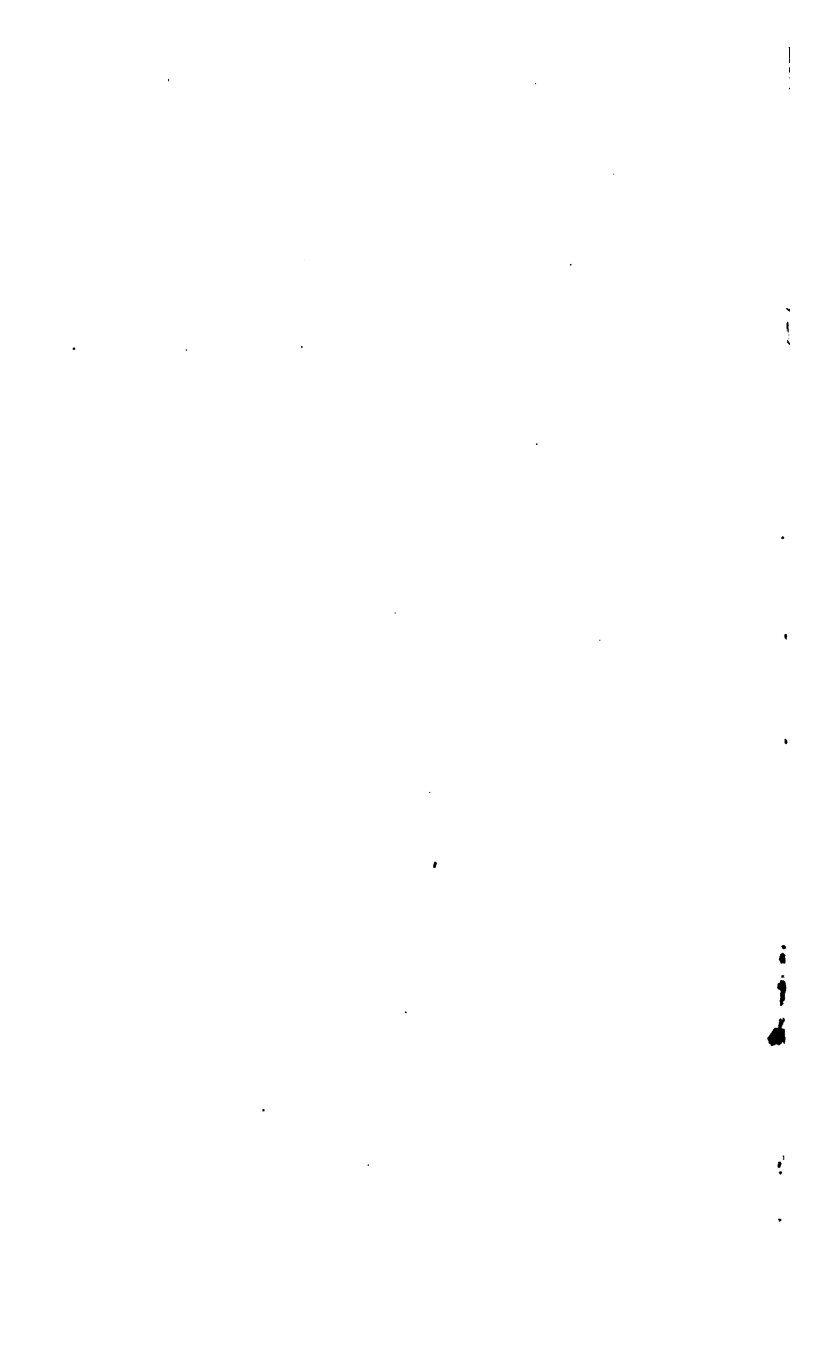
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CATALOGUE
OF
HYMENOPTEROUS INSECTS
IN
THE COLLECTION
OF THE
BRITISH MUSEUM.

BY
FREDERICK SMITH, M.E.S.

PART IV.
SPHEGIDÆ, LARRIDÆ, AND CRABRONIDÆ.

LONDON:
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1856.

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P R E F A C E.

THE object of the present Catalogue is to give a complete list of all the genera and species of Fossorial Hymenoptera which have been described in works, and a description of those in the British Museum which appear to have been hitherto overlooked.

The letters B.M. in the margin show the species now contained in the British Museum, and their absence indicates those which are desiderata, and therefore desirable to be procured for the Collection.

JOHN EDWARD GRAY.

12th June, 1856.

CATALOGUE

OF

HYMENOPTERA.

Div. II. ACULEATA.

Tribe 2. FOSSORES, *Latr.*

Fam. 3. SPHEGIDÆ.

The posterior margin of the *prothorax* not prolonged backwards to the insertion of the wings, anteriorly produced into a neck. *Abdomen* petiolated.

Genus 1. AMMOPHILA.

Sphex, pt., *Linn. Faun. Suec.* 411 (1761).

Pompilus, pt., *Fabr. Ent. Syst. Supp.* 246 (1798).

Pepsis, pt., *Fabr. Syst. Piez.* 207 (1804).

Ammophila, Kirby, *Trans. Linn. Soc.* iv. 195 (1804).

Psammophila, Dahlb. *Hym. Europ.* i. 16 (1843).

1. AMMOPHILA SABULOSA.

B.M.

Sphex sabulosa, *Linn. Faun. Suec.* no. 1648; *Syst. Nat.* i. 941. 1.
et *Cab. Mus. Linn. Soc.*

Scop. Ent. Carn. 770. f. 770.

Frisch, Ins. ii. t. 1. f. 6, 7, 8.

De Geer, Ins. ii. 822. t. 28. f. 7.

Fabr. Syst. Ent. p. 346. 1.

Schrank, Ins. Aust. 768.

Rossi, Faun. Etrus. ii. 60. 808.

Sphex sabulosa, *Christ. Hym.* p. 311. t. 31. f. 2.

Panz. Faun. Germ. 65. 12.

Latr. Hist. Nat. xiii. 292. 1.

Spin. Ins. Lig. i. 71. 1.

Jurine, Hym. i. 128.

Zett. Ins. Lapp. 435. 1.

Ammophila vulgaris, *Kirby, Trans. Linn. Soc.* iv. 195. 1.

Ammophila sabulosa, *Latr. Nouv. Dict.* ed. 2. i. 450; *Gen. Ins.* iv. 54.

Van d. Lind. Obs. i. 85. 2.

Brullé, Hist. Nat. Il. Canar. iii. 61.

Shuck. Foss. Hym. p. 75. 1.

Dahlb. Hym. Europ. i. 9, 10.

St. Farg. Hym. iii. 376. 17.

Wesm. Hym. Foss. Belg. 69. 1.

Hab. Britain; France; Germany; Italy; Sweden; Lapland; Algeria.

2. AMMOPHILA VIATICA.

B.M.

Sphex viatica, *Linn. Faun. Suec.* no. 1651; *Syst. Nat.* i. 943. 15, et *Cab. Mus. Linn. Soc.*

De Geer, Ins. ii. 152. t. 28. f. 16.

Sphex hirsuta, *Scop. Ent. Carn.* p. 772. f. 772.

Schrank, Ins. Aust. p. 380. 769.

Sphex arenaria, *Fabr. Mantis.* i. 273. 1.

Rossi, Faun. Etrus. ii. 60. 809.

Panz. Faun. Germ. 65. 13.

Zett. Ins. Lapp. p. 435. 2.

Ammophila hirsuta, *Kirby, Trans. Linn. Soc.* iv. 195. 4.

Van d. Lind. Obs. pt. 1. 89. 6.

Shuck. Foss. Hym. p. 77. 2.

Brullé, Expéd. Sc. Morée, iii. 369. 812.

St. Farg. Hym. iii. 364. 1.

Lucas, Explo. Sc. Algér. iii. 274. 1.

Pepsis arenaria, *Fabr. Syst. Piez.* p. 207. 1.

Illig. Ed. Faun. Etrus. ii. 92. 809.

Ammophila argentea, *Kirby, Trans. Linn. Soc.* iv. 195. 4 ♂.

Psammophila viatica, *Dahlb. Hym. Europ.* i. 18. 12.

Wesm. Hym. Foss. Belg. 69. 1.

Ammophila viatica, *Smith, Cat. Brit. Hym.* 16. 2.

Hab. Britain; France; Italy; Germany; Denmark.

3. AMMOPHILA LUTARIA.

B.M.

Sphex lutaria, *Fabr. Mantis.* i. 273. 3 ♂.

Gmel. Ed. Syst. Nat. i. pt. 5. p. 2724. 24.

Sphex lutaria, Vill. *Ent.* iii. 225. 17.

Jurine, *Hym.* p. 128.

Pepsis lutaria, Fabr. *Syst. Piez.* p. 208. 2.

Ammophila affinis, Kirby, Linn. *Trans.* iv. 195. 2 ♂ ♀.

Van d. Lind. Obs. i. 87. 5.

Shuck. Foss. Hym. p. 16. 6.

St. Farg. Hym. iii. 369. 8.

Lucas, Explo. Sc. Algér. iii. 274.

Psammophila affinis, Dahlb. *Hym. Europ.* i. 16. 11.

Wesm. Hym. Foss. Belg. 70. 2.

Hab. Britain ; France ; Germany ; North Africa (Oran).

4. AMMOPHILA HOLOSERICEA.

B.M.

Sphex holosericea, Fabr. *Ent. Syst.* ii. 205. 27 ; *Syst. Piez.* p. 207. 4.

Illig. Ed. Faun. Etrus. ii. 90. 808.

Coqueb. Illust. ii. 50. t. 12. f. 1.

Ammophila holosericea, Germ. *Reise Dalm.* p. 260. 345.

Van d. Lind. Obs. i. 86. 3.

Dahlb. Hym. Europ. i. 9.

St. Farg. Hym. iii. 378. 19.

Lucas, Explo. Sc. Algér. iii. 275.

Hab. Barbary ; Dalmatia ; France ; Germany ; Africa (Oran).

5. AMMOPHILA ARMATA.

Sphex sabulosa, Rossi, *Faun. Etrus.* ii. 60. 808 ; *Faun. Etrus.*

Mantis. ii. *Append.* t. 6. f. a. mas, b. fem.

Sphex armata, Illig. *Ed. Faun. Etrus.* ii. 91.

Ammophila armata, Latr. *Gen. Cr. et Ins.* iv. 54.

Van d. Lind. Obs. i. 85. 1.

St. Farg. Hym. iii. 371. 11. t. 30. f. 4.

Léon Dufour, Ann. Soc. Ent. Fr. vii. 291 (1838).

Hab. South of France ; Italy.

6. AMMOPHILA DIVES.

B.M.

Ammophila dives, Brullé, *Expéd. Sc. Morée*, iii. 369. 813, *Atlas*, t. 50. f. 10.

Hab. The Morea.

7. AMMOPHILA KLUGII.

Ammophila Klugii, St. Farg. *Hym.* iii. 367. 5.

Hab. Portugal.

8. AMMOPHILA HEYDENI.

Psammophila Heydeni, *Dahlb. Hym. Europ.* i. 430.

Hab. Central Europe.

9. AMMOPHILA ELONGATA.

Ammophila elongata, *Fisch. de Waldh. Mag. Zool. (Guér.)* 1843.

Hab. Russia.

10. AMMOPHILA NITIDA.

Ammophila nitida, *Fisch. de Waldh. Mag. Zool. (Guér.)* 1843.

Hab. Russia.

11. AMMOPHILA MADERÆ.

B.M.

Psammophila Maderæ, *Dahlb. Hym. Europ.* i. 21 & 432.

Psammophila senilis, *Dahlb. Hym. Europ.* i. 21 & 432.

Hab. Madeira; South of Europe.

12. AMMOPHILA TERMINATA.

B.M.

Ammophila apicalis, *Brullé, Hist. Nat. Il. Canar.* iii. pt. 2. p. 92.
62 (nec *Guér.*) 1832.

Hab. Canary Islands.

13. AMMOPHILA NIGRA.

Ammophila nigra, *Brullé, Hist. Nat. Il. Canar.* ii. pt. 2. p. 92. 64.

Hab. Canary Islands.

14. AMMOPHILA CONCOLOR.

Ammophila concolor, *Brullé, Hist. Nat. Il. Canar.* iii. pt. 2. p. 92. 63.

Hab. Canary Islands.

15. AMMOPHILA FERA.

Ammophila fera, *St. Farg. Hym.* iii. 365. 2.

Hab. Roumelia.

16. AMMOPHILA MELANOPUS.

Ammophila melanopus, *Lucas, Explo. Sc. Algér.* iii. 276, 277.
t. 14. f. 8.

Hab. Algeria.

17. *AMMOPHILA NASUTA*.

B.M.

Ammophila nasuta, *St. Farg. Hym.* iii. 380. 20.*Léon Dufour, Ann. Soc. Ent. Fr.* vii. 292.*Lucas, Explo. Sc. Algér.* iii. 375. t. 14. f. 7.*Hab.* Algeria (Oran); Portugal.18. *AMMOPHILA ARGENTEA*.

B.M.

Ammophila argentea, *Brullé, Hist. Nat. Il. Canar.* iii. 65.*Ammophila argentata*, *St. Farg. Hym.* iii. 366. 3. ? t. 30. f. 2.*Lucas, Explo. Sc. Algér.* iii. 274. t. 14. f. 6.*Hab.* Canary Islands; Algeria (Oran).19. *AMMOPHILA FESTIVA*.

B.M.

Female. Length 12 lines.—Black: head and thorax clothed with silvery pile, dense and brilliant on the face and sides of the thorax, as well as on the collar; a broad silver stripe passes over the tegulæ and unites with a similar stripe which runs from the collar to the middle of the disk; the anterior legs and intermediate femora and tibiæ ferruginous; the femora fuscous above; the calcaria pale rufo-testaceous; wings hyaline, the nervures and margins of the tegulæ ferruginous. Abdomen: thinly covered with silvery pile, the petiole and first segment of the abdomen black at the base; the apex, the second and third segments above and the entire abdomen beneath, ferruginous.

Hab. Tunis.20. *AMMOPHILA RUBRIPES*.*Ammophila rubripes*, *Spin. Ann. Soc. Ent. Fr.* vii. 465. 19 (1838).*Hab.* Egypt.21. *AMMOPHILA EBENINA*.*Ammophila ebenina*, *Spin. Ann. Soc. Ent. Fr.* vii. 464. 18.*St. Farg. Hym.* iii. 366. 4.*Hab.* Egypt.22. *AMMOPHILA INCANA*.

B.M.

Ammophila incana, *Dahlb. Hym. Europ.* i. 21. 423.*Hab.* Africa.23. *AMMOPHILA CANESCENS*.*Ammophila canescens*, *Dahlb. Hym. Europ.* i. 21 & 432.*Hab.* Africa.

24. *AMMOPHILA FERRUGINEIPES.*

B.M.

Ammophila ferrugineipes, *St. Farg. Hym.* iii. 383. 24.*Hab.* Cape of Good Hope; Port Natal; Sierra Leone; the Gambia.

Specimens of this species, received from Port Natal and Sierra Leone, have the petiole black above, as well as the posterior femora, the prothorax being entirely red, smooth and shining. Of an extensive series from the Gambia, some have the sides of the thorax more or less ferruginous; others have the thorax black, with the exception of a red spot on the collar; but several have the thorax entirely black, and the tarsi, as well as the posterior legs, fuscous.

25. *AMMOPHILA RUGICOLLIS.**Ammophila rugicollis*, *St. Farg. Hym.* iii. 373. 14.*Hab.* Cape of Good Hope.26. *AMMOPHILA RUBIGINOSA.**Ammophila rubiginosa*, *St. Farg. Hym.* iii. 372. 12.*Hab.* Cape of Good Hope. (Coll. F. Smith.)27. *AMMOPHILA BONÆ-SPEI.*

B.M.

Ammophila Bonæ-Spei, *St. Farg. Hym.* iii. 382. 23.*Lucas, Explo. Sc. Algér.* iii. 276.*Hab.* Cape of Good Hope.28. *AMMOPHILA TENUIS.*

B.M.

Sphex tenuis, *Pal. de Beauv. Ins.* p. 48. t. 7. f. 2.*Hab.* Sierra Leone.29. *AMMOPHILA LUDOVICUS.*

Female. Length 15 lines.—Black: the clypeus anteriorly and the mandibles ferruginous, the latter black at their apex; the face thinly covered with silvery pile, and having a number of short, scattered, stiff black hairs. Thorax rugose; the mesothorax posteriorly, the scutellum and post-scutellum longitudinally striated; the enclosed portion of the metathorax coarsely rugose, but having on each side a small space transversely striated; the tubercles and a spot on each side of the metathorax, at the insertion of the petiole, covered with silvery pile; the

wings deep fuscous, adorned with brilliant purple iridescence; the legs and the abdomen black, the latter thinly covered with fine grey silky pile.

Hab. Port Natal. (Coll. W. W. Saunders, Esq.)

30. *AMMOPHILA INSIGNIS*.

Female. Length 14 lines.—Head black, with the clypeus, mandibles and antennæ ferruginous; the tips of the mandibles black, and four or five of the apical joints of the flagellum fuscous. Thorax ferruginous, the mesothorax in the middle, above, and a stain at the sides and beneath fuscous; the metathorax fuscous above; the mesothorax transversely striated; the entire thorax clothed with very short pale golden pubescence, which is dense on the metathorax and on the sides, concealing the sculpture; legs red, the posterior trochanters above, and the femora at their base above having a fuscous line; wings hyaline, their nervures and tegulæ red. The abdomen beneath, the petiole and basal segment red, the following segments black above.

Male. Length 13 lines.—Black; the clypeus much produced, its apex emarginate, and having a longitudinal elevated carina down the middle; the face clothed with pale golden pubescence. Thorax black; wings as in the other sex; the legs red; the tarsi, a stripe on the intermediate femora above, the posterior coxæ, trochanters and femora, fuscous. Abdomen: the petiole fuscous above; otherwise as in the other sex.

Hab. Africa (the Gambia). (Coll. W. W. Saunders, Esq.)

31. *AMMOPHILA ERYTHROPUS*.

Ammophila rufipes, *St. Farg. Hym.* iii. 367. 5, nec *Guér.*

Hab. Senegal; Gambia. (Coll. F. Smith.)

Specimens from the Gambia have the mandibles, anterior margin of the clypeus, and three basal joints of the antennæ, ferruginous.

32. *AMMOPHILA CYANIPENNIS*.

B.M.

Ammophila cyanipennis, *St. Farg. Hym.* iii. 370. 9.

Hab. Senegal.

33. *AMMOPHILA BENINIENSIS*.

B.M.

Sphex Beniniensis, *Pal. de Beauv. Ins.* p. 48. t. 7. f. 1.

Hab. West Africa (Benin); Sierra Leone; Port Natal.

34. *AMMOPHILA CLAVUS*.

Sphex clavus, *Fabr. Ent. Syst.* ii. 205. 26; *Syst. Piez.* 206. 3.

Hab. New Holland. (Banksian Collection, Mus. Linn. Soc.)

35. *AMMOPHILA SUSPICIOSA*.

B.M.

Female. Length 7-8 lines.—Black: the face densely covered with silvery pile; the head and thorax thinly clothed with long silvery-white pubescence; the pro- and mesothorax strongly punctured, the metathorax rugose; the wings hyaline, with a faint cloud at their apical margins, the nervures ferruginous; the legs have a thin silvery pile. Abdomen with the petiole, the base of the first segment, the apical margin of the third and the following segments entirely black.

The male only differs in being smaller and more slender in form.

Hab. Australia (Swan River; Hunter River; North-west Coast).

The only difference between this species and *A. argentata* consists in the coloration of the abdomen; probably it is a mere variety.

36. *AMMOPHILA INSTABILIS*.

B.M.

Female. Length 10 lines.—Black: the scape, two basal joints of the antennæ, and the mandibles ferruginous; the base and tips of the latter black; the face thinly covered with silvery pile. Thorax: the prothorax, and mesothorax before the insertion of the wings, transversely striated; the posterior portion of the mesothorax is obliquely striated inwardly, the scutellum and post-scutellum longitudinally striated, and the metathorax transversely so; the collar on each side, the tubercles, a spot beneath the wings, the metathorax, scutellum, post-scutellum and legs, ferruginous; the wings flavo-hyaline, the nervures and tegulæ pale ferruginous. Abdomen: the petiole, basal segment of the abdomen and basal half of the following segment ferruginous; the rest of the abdomen blue-black, and a black spot at the base of the second joint of the petiole.

Hab. Australia (Swan River; Port Essington).

The colouring of the metathorax is very inconstant in this species; in some examples the sides only of the metathorax are ferruginous, in others it is entirely black, and the spot beneath the wings, the scutellum and post-scutellum are likewise black: varieties also occur between these extremes.

AMMOPHILA BASALIS.

B.M.

male. Length $7\frac{1}{2}$ - $8\frac{1}{2}$ lines.—Black: the head smooth,

shining, and thinly covered with fine sericeous pile; on the clypeus it is dense and silvery; the mandibles and scape ferruginous, the former black at their tips, the latter fuscous above. Thorax: the pro- and mesothorax transversely striated, the latter has a longitudinal impressed central line; the enclosed portion of the metathorax evenly and obliquely striated; the striation irregular beyond; the tubercles, apex of the metathorax, and the coxæ covered with silvery pile; the legs ferruginous, the coxæ, trochanters above and the apical joints of the tarsi fuscous: sometimes the coxæ are black; the wings hyaline, their apical margins faintly clouded, the nervures ferruginous; the second transverso-cubital nervure geniculated, sometimes having a short appendage at the angle of the geniculation. Abdomen: blue-green, with the two basal segments ferruginous, the extreme base of the second joint of the petiole black, the apical margin of the second segment blue-green.

Hab. India (N. India; Punjab).

38. *AMMOPHILA NIGRIPES.*

B.M.

Male. Length 7 lines.—Black: the face clothed with silvery pile; the cheeks and sides of the thorax thinly covered with silvery-white pubescence; the vertex smooth and shining; the entire thorax transversely striated above; the scutellum and post-scutellum longitudinally striated; wings subhyaline, the nervures and tegulæ pale ferruginous. The second joint of the petiole beneath, and the first segment of the abdomen ferruginous; the apical margin of the latter and the following segments blue, covered above with silvery pile.

Hab. Madras.

39. *AMMOPHILA LÆVIGATA.*

B.M.

Female. Length $7\frac{1}{2}$ lines.—Black: the face densely covered with silvery pile; the head, pro- and mesothorax smooth and shining, the latter having only a few delicate punctures; the enclosed portion of the metathorax rugose, its sides striated; the sides of the thorax, the coxæ and trochanters thinly covered with silvery pile; the anterior and intermediate femora and tibiæ ferruginous; the posterior femora and base of the tibiæ ferruginous, with a black stripe above; one or two of the basal joints of the anterior and intermediate tarsi ferruginous. Abdomen: the petiole and first segment of the abdomen ferruginous, with usually an uninterrupted black stripe above, which is occasionally more or less abbreviated; the rest of the abdomen black.

Hab. Madras; Guzerat.

34. *AMMOPHILA CLAVUS*.

Sphex clavus, *Fabr. Ent. Syst.* ii. 205. 26; *Syst. Piez.* 206. 3.

Hab. New Holland. (Banksian Collection, Mus. Linn. Soc.)

35. *AMMOPHILA SUSPICIOSA*.

B.M.

Female. Length 7-8 lines.—Black: the face densely covered with silvery pile; the head and thorax thinly clothed with long silvery-white pubescence; the pro- and mesothorax strongly punctured, the metathorax rugose; the wings hyaline, with a faint cloud at their apical margins, the nervures ferruginous; the legs have a thin silvery pile. Abdomen with the petiole, the base of the first segment, the apical margin of the third and the following segments entirely black.

The male only differs in being smaller and more slender in form.

Hab. Australia (Swan River; Hunter River; North-west Coast).

The only difference between this species and *A. argentata* consists in the coloration of the abdomen; probably it is a mere variety.

36. *AMMOPHILA INSTABILIS*.

B.M.

Female. Length 10 lines.—Black: the scape, two basal joints of the antennæ, and the mandibles ferruginous; the base and tips of the latter black; the face thinly covered with silvery pile. Thorax: the prothorax, and mesothorax before the insertion of the wings, transversely striated; the posterior portion of the mesothorax is obliquely striated inwardly, the scutellum and post-scutellum longitudinally striated, and the metathorax transversely so; the collar on each side, the tubercles, a spot beneath the wings, the metathorax, scutellum, post-scutellum and legs, ferruginous; the wings flavo-hyaline, the nervures and tegulæ pale ferruginous. Abdomen: the petiole, basal segment of the abdomen and basal half of the following segment ferruginous; the rest of the abdomen blue-black, and a black spot at the base of the second joint of the petiole.

Hab. Australia (Swan River; Port Essington).

The colouring of the metathorax is very inconstant in this species; in some examples the sides only of the metathorax are ferruginous, in others it is entirely black, and the spot beneath the wings, the scutellum and post-scutellum are likewise black: varieties also occur between these extremes.

37. *AMMOPHILA BASALIS*.

B.M.

Female. Length $7\frac{1}{2}$ - $8\frac{1}{2}$ lines.—Black: the head smooth,

shining, and thinly covered with fine sericeous pile; on the clypeus it is dense and silvery; the mandibles and scape ferruginous, the former black at their tips, the latter fuscous above. Thorax: the pro- and mesothorax transversely striated, the latter has a longitudinal impressed central line; the enclosed portion of the metathorax evenly and obliquely striated; the striation irregular beyond; the tubercles, apex of the metathorax, and the coxæ covered with silvery pile; the legs ferruginous, the coxæ, trochanters above and the apical joints of the tarsi fuscous: sometimes the coxæ are black; the wings hyaline, their apical margins faintly clouded, the nervures ferruginous; the second transverso-cubital nervure geniculated, sometimes having a short appendage at the angle of the geniculation. Abdomen: blue-green, with the two basal segments ferruginous, the extreme base of the second joint of the petiole black, the apical margin of the second segment blue-green.

Hab. India (N. India; Punjab).

38. *AMMOPHILA NIGRIPES*.

B.M.

Male. Length 7 lines.—Black: the face clothed with silvery pile; the cheeks and sides of the thorax thinly covered with silvery-white pubescence; the vertex smooth and shining; the entire thorax transversely striated above; the scutellum and post-scutellum longitudinally striated; wings subhyaline, the nervures and tegulæ pale ferruginous. The second joint of the petiole beneath, and the first segment of the abdomen ferruginous; the apical margin of the latter and the following segments blue, covered above with silvery pile.

Hab. Madras.

39. *AMMOPHILA LÆVIGATA*.

B.M.

Female. Length $7\frac{1}{4}$ lines.—Black: the face densely covered with silvery pile; the head, pro- and mesothorax smooth and shining, the latter having only a few delicate punctures; the enclosed portion of the metathorax rugose, its sides striated; the sides of the thorax, the coxæ and trochanters thinly covered with silvery pile; the anterior and intermediate femora and tibiæ ferruginous; the posterior femora and base of the tibiæ ferruginous, with a black stripe above; one or two of the basal joints of the anterior and intermediate tarsi ferruginous. Abdomen: the petiole and first segment of the abdomen ferruginous, with usually an uninterrupted black stripe above, which is occasionally more or less abbreviated; the rest of the abdomen black.

Hab. Madras; Guzerat.

40. *AMMOPHILA DIMIDIATA*.

B.M.

Female. Length 11 lines.—Head and thorax black; the scape, five or six of the basal joints of the flagellum, the clypeus in the middle, and the mandibles ferruginous; the latter black at their tips. The pro- and mesothorax above and the scutellum ferruginous and transversely striated; the metathorax rugose, the sides of the enclosed space striated; on each side of the enclosure, one or two minute ferruginous spots; these are sometimes obsolete; wings yellow, their apical margins faintly clouded, a fuscous spot at the apex of the marginal cell; legs and tegulæ ferruginous, the coxæ more or less fuscous or black at their base. Abdomen bright blue, the petiole ferruginous, with a fuscous spot at the base of the second joint.

Hab. India (Bombay; Madras; N. Bengal).

41. *AMMOPHILA ERYTHROCEPHALA*.

B.M.

Sphex erythrocephala, *Fabr. Ent. Syst.* ii. 204. 23.

Pelopæus erythrocephalus, *Fabr. Syst. Piez.* p. 203. 2; *Cab.*

Banks. Mus. Linn. Soc.

Ammophila erythrocephala, *St. Farg. Hym.* iii. 385. 26.

Hab. India (Punjaub). (Coll. Gen. Hearsey.)

42. *AMMOPHILA ELEGANS*.

B.M.

Female. Length 10 lines.—Black: the head and thorax densely clothed with silvery pile; the scape in front, and the basal half of the mandibles ferruginous. The metathorax transversely striated; the wings hyaline, the nervures rufo-fuscous; the tegulæ and legs ferruginous; the coxæ, posterior trochanters, and the anterior and intermediate pairs above, black; the posterior femora black towards their base above; the first joint of the petiole, and the base of the second joint black; the rest of the abdomen ferruginous, the apical margins of the segments being pale; the third segment has a fuscous spot in the middle of its base.

Male. Length 9 lines.—This sex closely resembles the female, differing only in having several fuscous spots down the middle of the abdomen.

Var. The tarsi fuscous, sometimes only the anterior and intermediate pairs.

Hab. Northern India (Punjaub).

The male differs in having the petiole almost entirely red, and in all the specimens examined, merely a fuscous spot at

the base of the second joint of the petiole; the abdomen has only a dark stain on the sixth segment.

43. *AMMOPHILA ATRIPES*.

B.M.

Ammophila atripes, *Smith, Ann. & Mag. Nat. Hist. ser. 2. ix. 46* (1852).

Hab. India (Khandala); Sumatra; China (Shanghai).

This species is frequently more highly coloured than the specimens described from Khandala, the first segment of the abdomen being red, with merely the base of the second joint black; the three basal joints of the tarsi are also ferruginous; the wings hyaline, and yellowish towards their base.

44. *AMMOPHILA SIMILLIMA*.

B.M.

Female. Length 11 lines.—Black: the face densely covered with silvery pile; the scape ferruginous, slightly fuscous above. Thorax: the tubercles and apex of the metathorax covered with silvery pile; the pro- and metathorax transversely deeply striate; the scutellum and post-scutellum longitudinally striate; the metathorax rugose, the sides of the enclosed space obliquely striated; the tibiae and femora ferruginous, the intermediate and posterior femora having a black stripe above, which sometimes extends from their base to their apex; one or two of the basal joints of the anterior and intermediate tarsi ferruginous or fusco-ferruginous; the wings yellowish, their nervures black. Abdomen: the second joint of the petiole ferruginous towards its apex; the abdomen blue.

Hab. China (Hong Kong).

This species closely resembles *A. atripes*, of which it may prove to be an extreme variety.

45. *AMMOPHILA SMITHII*.

Ammophila Smithii, *Baly, MSS.*

Female. Length 10½ lines.—Black: the head and thorax covered with silvery pile, which is very dense on the face, cheeks, thorax beneath, the coxæ, and sides of the metathorax; the scape, anterior margin of the clypeus and the mandibles ferruginous, the latter black at their tips; the legs red, the intermediate and posterior tarsi fusco-ferruginous; wings hyaline, the tegulae and nervures ferruginous. The first joint of the petiole fusco-ferruginous, the second with a black spot at its base above; the abdomen red, the fourth segment having a large black spot

in the centre of its apex, and the fifth and sixth segments being entirely black.

Hab. India. (Coll. J. S. Baly, Esq.)

46. *AMMOPHILA PUNCTATA*.

B.M.

Female. Length 8 lines.—Black: the face covered with silvery pile, the cheeks and sides of the thorax have a thin long white pubescence; the head, pro- and metathorax, scutellum and post-scutellum strongly punctured; the metathorax transversely rugose, and having a central longitudinal carina; its extreme apex, the sides of the thorax, and the tubercles densely clothed with silvery pile; the collar has a minute tubercle in the middle; the wings hyaline and iridescent, their apical margins faintly clouded. Abdomen: the second joint of the petiole, except its extreme base, and the first and second segments of the abdomen ferruginous.

Hab. Northern India.

47. *AMMOPHILA VAGABUNDA*.

B.M.

Female. Length 9 lines.—Black: the face has a few scattered large punctures interspersed with very fine ones. The prothorax transversely rugose anteriorly and punctured posteriorly, and having an abbreviated impressed line at its hinder margin; the mesothorax has a longitudinal central impressed line, and is strongly punctured, the punctures becoming confluent, and forming irregular striæ at the sides; the scutellum longitudinally rugose; the enclosed portion of the metathorax obliquely rugose-striate, the sides of the thorax and also beneath rugose; the wings subhyaline, slightly iridescent, and faintly clouded at their apical margins. Abdomen: the second joint of the petiole and first segment of the abdomen ferruginous, the base of the former black; the apical segments of a blue-black.

Hab. North China (Tein-tung; Foo-chou-foo); Sumatra; Northern India.

48. *AMMOPHILA PULCHELLA*.

B.M.

Male. Length $8\frac{1}{2}$ –10 lines.—Black: the face covered with silvery pile; the pro- and metathorax transversely striated; the scutellum and post-scutellum longitudinally striated, the metathorax rugose; the wings flavo-hyaline, and having a faint cloud on their apical margins, the nervures fusco-ferruginous; the underside of the second joint of the abdomen ferruginous; the abdomen blue, and thinly covered with cinereous pile.

Hab. Hong Kong; North China (Shanghai).

This is probably the male of *A. simillima*.

49. *AMMOPHILA OPULENTA*.

B.M.

Ammophila opulenta, *Guér. Voy. Coq. Zool.* pt. 2. p. 261.*Hab.* Para; Rio.

Specimens received from Rio differ somewhat in sculpture from those of Para; the mesothorax has a deep longitudinal impressed line, and the metathorax is much more finely striated, but it has not been considered more than a local variety.

50. *AMMOPHILA EXIMIA*.

B.M.

Ammophila eximia, *St. Farg. Hym.* iii. 373. 13.*Hab.* Brazil.51. *AMMOPHILA TARSATA*.*Ammophila urnaria*, *St. Farg. Hym.* iii. 381. 22 (nec *Dahlb.*).*Hab.* Brazil.52. *AMMOPHILA MONETA*.

Female. Length 10 lines.—Head, thorax and legs black; the face covered with dense pale golden pubescence; the clypeus truncate, and having a few scattered punctures. Thorax: the tubercles, an oblong stripe beneath the wings, a spot on each side at the base of the metathorax, and another on each side at the insertion of the petiole, covered with pale golden pubescence; the enclosed portion of the metathorax obliquely striated; the mesothorax transversely rugose, the scutellum longitudinally striated; wings fusco-hyaline. Abdomen blue, the petiole black.

The male resembles the female, but has the clypeus produced and deeply notched at the apex.

Hab. Brazil. (Coll. F. Smith.)53. *AMMOPHILA FRAGILIS*.

B.M.

Female. Length 8–9 lines.—Black: the face and tubercles covered with pale golden sericeous pubescence; an elongate oblique stripe beneath the wings, a spot of golden pubescence on each side of the metathorax at its base, and another at its apex; the pro- and mesothorax have an elongate central channel, and another on each side over the tegulæ; the scutellum and post-scutellum longitudinally rugose-striate; the enclosed portion of the metathorax rugose in the middle and striated at the sides; wings hyaline, their apical margins faintly clouded;

the legs black; the abdomen blue-black, the second joint of the petiole and base of the abdomen ferruginous beneath.

The male only differs in being rather smaller.

Hab. Brazil.

54. *AMMOPHILA RUFIPES.*

Ammophila rufipes, *Guér. Voy. Coq. Zool.* pt. 2. p. 262. *Atlas*,
Ins. no. 9. f. 1.

Spin. Gay's Chili, vi. 393. 1.

Hab. Peru.

55. *AMMOPHILA ABBREVIATA.*

B.M.

Pelopœus abbreviatus, *Fabr. Syst. Piez.* p. 204. 8.

Ammophila abbreviata, *Dahlb. Hym. Europ.* i. 15.

St. Farg. Hym. iii. 375. 15.

Erichs. Faun. et Fl. Brit. Guiana, 588. 1.

Hab. South America.

56. *AMMOPHILA EUGENIA.*

Female. Length 15 lines.—Head and thorax black; the face densely clothed with golden pile; the clypeus produced and having a short blunt tooth at the apex; mandibles ferruginous, their tips black. The pro- and mesothorax and also the tegulæ covered with a changeable pale golden silky pile; the tubercles, a large patch beneath the wings, and a spot at the apex of the metathorax, on each side of the insertion of the petiole, of pale golden pubescence; the coxæ and breast are also thinly covered with a similar coloured pile; the enclosed portion of the metathorax obliquely rugose-striate in the middle and evenly striated at the sides; the legs red; a stripe on the intermediate femora above, another above and beneath on the posterior pair, the knees, the tips of the joints of the tarsi, and the claw-joint, entirely black; the wings hyaline, their apical margins faintly clouded. Abdomen ferruginous, covered with a fine sericeous pile; the first joint of the petiole and the base of the second joint black; the third segment black, its apical margin narrowly ferruginous in the middle.

Hab. Rio Grande. (Coll. W. W. Saunders, Esq.)

57. *AMMOPHILA RUFICOSTA.*

Ammophila ruficosta, *Spin. Gay's Chili*, vi. 394. 2.

Hab. Chili.

58. *AMMOPHILA GRACILIS*.

Ammophila gracilis, *St. Farg. Hym.* iii. 381. 21.

Hab. Mexico.

59. *AMMOPHILA ATRICEPS*.

B.M.

Female. Length 8 lines.—Black: head coarsely punctured; the anterior margin of the clypeus rounded; the face and cheeks have a long thin black pubescence, a few black hairs also on the vertex. Thorax coarsely punctured, and having a long thin griseous pubescence; the enclosed portion of the metathorax rugose at the base and rugose-striate at the apex; wings fusco-hyaline, the nervures black. Abdomen ferruginous; the petiole, the apical half of the fourth segment, and the fifth and sixth, black.

Male.—This sex has the head clothed with black pubescence and the face silvery; the clypeus slightly produced, its anterior margin rounded; the thorax is closely punctured; the abdomen as in the female.

Hab. Mexico.

60. *AMMOPHILA BREVICEPS*.

B.M.

Female. Length 8 lines.—Black: the face densely covered with silvery pile; the vertex smooth; the sides of the thorax clothed with silvery pile, the disk and mesothorax thinly covered with pile, the latter transversely striated; the mesothorax punctured and having a central longitudinal impressed line; the wings hyaline and iridescent, their apical margins faintly clouded; the nervures rufo-testaceous, the tegulæ and legs ferruginous; the coxæ and base of the femora black; the posterior tibiæ slightly fuscous towards their apex. Abdomen red; the first joint of the petiole black, the second more or less fuscous above; the first segment of the abdomen has an elongate fuscous stripe above, the third a small spot at its basal margin, the fourth is black except a narrow apical border, and the extreme apex is fuscous.

Hab. Mexico.

Only a single specimen of this species is in the Collection: it is most probable that a series would exhibit great variety in the markings on the abdomen: in general appearance it closely resembles *A. nasuta*, but the clypeus is not produced.

61. *AMMOPHILA PLACIDA*.

B.M.

Male. Length 9 lines.—Black: the face and cheeks have a long thin black pubescence. The prothorax smooth; the meso-

thorax very finely wrinkled transversely, and having on each side before the tegulæ a short impressed line; the metathorax very delicately transversely striated, beyond the enclosed portion rugose; the wings hyaline with stains of yellow, the nervures and tegulæ behind pale ferruginous; the apical margins of the wings faintly clouded. Abdomen: the petiole elongate, the second joint towards the apex beneath, and the base of the first segment of the abdomen ferruginous.

Hab. California.

62. *AMMOPHILA GRYPHUS*.

B.M.

Female. Length 14-16 lines.—Black: the face thinly covered with silvery pile; the clypeus slightly produced, punctured and subemarginate; the vertex smooth, and covered, as well as the cheeks, with a thin fine silky pile; the pro- and mesothorax transversely striated, the latter having a central longitudinal impressed line; the scutellum and post-scutellum longitudinally striate; the metathorax obliquely striated; the tubercles silvery, an oblique silvery stripe beneath the wings, and a similar one behind it on the sides of the metathorax, the apex of the latter and the posterior coxæ above covered with silvery pile; the wings subhyaline, with a narrow fuscous stripe beyond the marginal cell. Abdomen: the petiole elongate, the second joint beneath, at its apex above, and the first segment of the abdomen ferruginous; the following segments obscurely æneous.

Male.—Sculptured and adorned like the female, differing in being rather smaller, and in the abdomen and petiole being black above, the basal segment of the abdomen ferruginous beneath.

Hab. North America (Charleston; East Florida; California).

Specimens from California are smaller and have more red on the abdomen; in every other particular they agree with those from the Eastern States.

63. *AMMOPHILA SÆVA*.

B.M.

Female. Length 11-12 lines.—Head and thorax black; the face and cheeks covered with short silvery pubescence; the vertex smooth and shining. The pro- and mesothorax transversely, irregularly and coarsely striated, and each having a central longitudinal deeply impressed line; the mesothorax has also posteriorly a deep longitudinal depression on each side of the central one; the metathorax has the enclosed portion obliquely striated from the centre; the sides of the thorax and the pectus rugose; a minute spot of silvery pubescence beneath the wings at their

insertion, two broad oblique lines on the sides of the thorax, the metathorax behind, also the intermediate and posterior coxæ behind, covered with silvery pubescence; the wings fusco-hyaline, the posterior pair palest, hyaline towards their base. Abdomen ferruginous; the first joint of the petiole and a large macula on the fourth and fifth segments above, black.

Hab. California.

64. *AMMOPHILA INTERCEPTA.*

B.M.

Ammophila intercepta, *St. Farg. Hym.* iii. 378. 18.

Hab. North America (Illinois).

65. *AMMOPHILA ARVENSIS.*

Ammophila arvensis, *St. Farg. Hym.* iii. 384. 25.

Hab. North America.

66. *AMMOPHILA URNARIA.*

B.M.

Ammophila urnaria, *Dahlb. Hym. Europ.* i. 14.

Ammophila conditor, *Harris, Cat. Ins. Massach.*

Hab. South Carolina; Nova Scotia; St. John's Bluff, East Florida.

67. *AMMOPHILA NIGRICANS.*

Ammophila nigricans, *Dahlb. Hym. Europ.* i. 14.

Hab. South Carolina.

68. *AMMOPHILA CONDITOR.*

B.M.

Female. Length $8\frac{1}{2}$ lines.—Black: the clypeus coarsely punctured; the prothorax transversely striated; the mesothorax coarsely punctured, the punctures running into striæ at the sides; the scutellum longitudinally grooved; the enclosed portion of the metathorax obliquely striated, beyond which it is rugose; wings fusco-hyaline, the nervures and tegulæ behind ferruginous. Abdomen: the petiole elongate, the second joint and first segment of the abdomen red, the base of the former black towards the base above.

Hab. St. John's Bluff, East Florida.

69. *AMMOPHILA CEMENTARIA.*

B.M.

Female. Length $7-8\frac{1}{2}$ lines.—Black: head strongly punctured, thinly covered with long black pubescence; the pro- and mesothorax, scutellum and post-scutellum coarsely punctured;

the collar has an impressed line in the centre, as well as the mesothorax; the enclosed portion of the metathorax finely aciculate transversely, beyond it is strongly punctured. The thorax covered with long black pubescence at the sides; wings dark fuscous, the posterior pair being subhyaline towards their base; the apical margins have a darker cloud, and the wings are adorned with a violet iridescence. Abdomen ovate, attached by a short petiole, which is black; the first and second segments red.

Hab. St. John's Bluff, East Florida; Georgia.

70. *AMMOPHILA LUCTUOSA.*

B.M.

Female. Length 9 lines.—Black: head and thorax coarsely punctured, thickly covered with long black pubescence, which is most sparing on the disk of the thorax; the metathorax rugose; wings dark fuscous, the posterior pair being subhyaline towards their base. Abdomen ovate, attached by a short petiole, and very smooth and shining.

Hab. Nova Scotia; California; Rocky Mountains.

71. *AMMOPHILA PROCERA.*

Ammophila procera, *Dahlb. Hym. Europ.* i. 15.

St. Farg. Hym. iii. 376. 16.

Hab. North America.

72. *AMMOPHILA VIOLACEIPENNIS.*

Ammophila violacei-pennis, *St. Farg. Hym.* iii. 370. 10.

Hab. Philadelphia.

73. *AMMOPHILA APICALIS.*

Ammophila apicalis, *Guér. Icon. Règ. Anim.* iii. p. 435. t. 70. f. 3.

Hab. Cuba.

Genus 2. *MISCUS.*

Miscus, *Jurine, Hym.* i. 130 (1807).

Ammophila, pt., *Latr. Gen. Crust. et Ins.* iv. (1809).

Sphex, pt., *Zett. Ins. Lapp.* p. 436 (1840).

1. *MISCUS CAMPESTRIS.*

Ammophila campestris, *Latr. Gen. Crust. et Ins.* iv. 54.

St. Farg. & Serv. Ency. Méth. x. 453. 3.

Curtis, Brit. Ent. xiii. t. 604.

Miscus campestris, *Van d. Lind. Obs.* i. 93. 1.

Shuck. Foss. Hym. 80. 1.

Dahlb. Hym. Europ. i. 7. 9.

St. Farg. Hym. iii. 386. t. 30. f. 5.

Steph. Illust. vii. Supp. p. 15. t. 41. f. 4.

Wesm. Hym. Foss. Belg. p. 70. 1.

Sphex campestris, *Zett. Ins. Lapp.* 436. 3.

2. *MISCUS NEOXENUS*.

B.M.

Female. Length 8 lines.—Black: the head smooth, slightly shining, the face densely covered with short silvery pile; a thin silky pile covers the vertex; a central impressed line in front of the anterior stemma extending to the insertion of the antennæ; the clypeus has a shining naked space in the middle anteriorly. Thorax: the pro- and mesothorax subrugose and thinly covered with short white silky pubescence; the scutellum longitudinally rugose; the enclosed space on the metathorax obliquely striated, the sides have a thin silky short white pubescence; the sides of the breast and the tubercles densely covered with bright glittering silvery pubescence; the wings subhyaline, the nervures fuscous; the stigma, extreme base of the wings and the tegulæ behind pale ferruginous. Abdomen ferruginous, the three apical segments black.

The male resembles the female, but is more pubescent, the body and legs are entirely covered with short silky pile, and the head and thorax have a thin scattered long white pubescence; the first joint of the petiole black.

Hab. North China (Shanghai).

Genus 3. *COLOPTERA*.

Coloptera, *St. Farg. Hym.* iii. 387. 1.

1. *COLOPTERA BARBARA*.

Coloptera Barbara, *St. Farg. Hym.* iii. 387. 1.

Lucas, Explo. Sc. Algér. iii. 276. t. 14. f. 9.

Hab. Algeria (Oran).

2. *COLOPTERA PROXIMA*.

Female. Length 13 lines.—Black: the clypeus anteriorly, the scape and the mandibles ferruginous; four or five of the basal joints of the flagellum fusco-ferruginous; the tips of the mandibles black; the clypeus truncate, the angles acute; the

sides of the face densely covered with pale golden pile. Thorax : the pro- and mesothorax above ferruginous and transversely striated; the anterior margin of the mesothorax covered with golden pile, a black stripe running down the middle; the scutellum and post-scutellum longitudinally striated, the metathorax obliquely so; the sides, beyond the enclosed space, finely rugose; the legs fusco-ferruginous, the anterior pair, the intermediate tibiæ, the articulations and beneath being of a brighter red; the wings fuscous and slightly iridescent. Abdomen thinly covered with a fine cinereous pile, the joints of the petiole ferruginous beneath.

Hab. Guinea. (Coll. W. W. Saunders, Esq.)

This insect closely resembles *Ammophila tenuis* and *Beniniensis*, for either of which it might, without an examination of the neuuration of the wings, be easily mistaken.

Genus 4. TRIGONOPSIS.

Trigonopsis, Perty, *Del. An. Art.* p. 142 (1830-4).

1. TRIGONOPSIS RUFIVENTRIS. Pl. VI. fig. 1.

Podium rufiventre, *Fabr. Syst. Piez.* 184. 2.

Trigonopsis abdominalis, Perty, *Del. An. Art.* p. 142. t. 27. f. 17.

Hab. — ?

This insect appears to be the *Podium rufiventre* of Fabricius; the large depressed head, the large eyes, and above all the white scutellum, are described in the *Systema Piezatorum*; the latter is not strictly correct, the white being a patch of silvery pubescence beneath the scutellum.

2. TRIGONOPSIS AFFINIS.

B.M.

Trigonopsis affinis, *Smith, Ann. & Mag. Nat. Hist.* vii. 31 (1851).

Hab. Brazil (Para).

This species differs from *T. rufiventris* in having the head less depressed, the prothorax much shorter and less attenuated, the metathorax transversely striated, and the anterior and intermediate tibiæ and tarsi ferruginous.

3. TRIGONOPSIS VIOLACEUS.

B.M.

Trigonopsis violaceus, *Smith, Ann. & Mag. Nat. Hist.* vii. 31 (1851).

Hab. Brazil (Para).

This species has the head and abdomen violet; the thorax and legs black, with faint tints of blue; the metathorax has a deep central longitudinal channel, which is transversely striated: the sides are rugose; the head, prothorax and wings as in *T. rufiventris*.

Genus 5. PELOPÆUS.

Sphex, pt., *Linn. Syst. Nat.* i. 492 (1761).
Pelopæus, *Latr. Hist. Nat. Ins.* xiii. (1804).
Pepsis, pt., *Illig. Ed. Faun. Etrus.* ii. 94 (1807).
Chalybion, *Dahlb. Hym. Europ.* i. 21 (1845).

1. PELOPÆUS SPIRIFEX.

B.M.

Sphex spirifex, *Linn. Syst. Nat.* i. 942. 9.
Fabr. Ent. Syst. ii. 204. 24.
Christ. Hym. 303. t. 30. f. 2.
Sphex Egyptia, *Linn. Syst. Nat.* i. 942. 10 (var.).
Pelopæus spirifex, *Fabr. Syst. Piez.* 202. 1.
Latr. Gen. Crust. et Ins. iv. 60.
Pal. de Beauv. Ins. Afric. et Amér. 49. 7. 3.
Duméril, Consid. 212. t. 32. f. 5.
Van d. Lind. Obs. 95. 1.
Brullé, Expéd. Sc. de Morée, iii. 307. 814; *Hist. Nat. II. Canar.* iii. 92. 60.
Dahlb. Hym. Europ. i. 22. 1.
St. Farg. Hym. iii. 305. 1.
Eversm. Bull. Mosc. xxi. 249.
Lucas, Explo. Sc. Algér. iii. 273. t. 14. f. 10.

Hab. Europe; North Africa.

2. PELOPÆUS DESTILLATORIUS.

B.M.

Sphex spirifex, *Sulzer, Hist. Ins.* t. 27. f. 2 (nec *Linn.*).
Schæff. Icon. Ins. Ratisb. t. 38. f. 1.
Panzer, Faun. Germ. 76. 15.
Pepsis destillatorius, *Illig. Ed. Faun. Etrus.* ii. 94.
Pelopæus destillatorius, *Latr. Gen. Crust. et Ins.* iv. 60. 2.
Van d. Lind. Obs. i. 96. 2.
Dahlb. Hym. Europ. i. 22. 2.
Eversm. Bull. Mosc. xxi. 249 (1848).

Hab. France; Italy; Germany; Sicily; Russia.

3. PELOPŒUS FEMORATUS.

B.M.

Sphex femorata, *Fabr. Ent. Syst.* ii. 202. 16.Pepsis femorata, *Fabr. Syst. Piez.* 212. 20.*Spin. Ins. Lig.* i. 72. 5.Pelopœus femoratus, *Latr. Gen. Crust. et Ins.* iv. 61.*Van d. Lind. Obs.* i. 97. 5.*St. Farg. Hym.* iii. 322. 23.Chalybion femoratus, *Dahlb. Hym. Europ.* i. 433. 4.*Hab.* Italy; Albania; Geneva.

4. PELOPŒUS TUBIFEX.

Sphex spirifex, var. β , *Rossi, Faun. Etrus.* ii. 61. t. 2. f. 13.Pelopœus tubifex, *Latr. Gen. Crust. et Ins.* iv. 61.*Van d. Lind. Obs.* i. 96. 4.*St. Farg. Hym.* iii. 314. 14.*Hab.* Albania.

5. PELOPŒUS PENSILIS.

B.M.

Pepsis pensilis, *Illig. Ed. Faun. Etrus.* ii. 94.Pelopœus pensilis, *Latr. Gen. Crust. et Ins.* iv. 60. 3.*Van d. Lind. Obs.* i. 96. 3.*St. Farg. Hym.* iii. 306. 3. t. 29. f. 2.*Lucas, Explo. Sc. Algér.* iii. 273. t. 14. f. 10.*Hab.* Central Europe; Albania; Portugal; North Africa (Oran).

6. PELOPŒUS SARDONIUS.

Pelopœus sardonius, *St. Farg. Hym.* iii. 308. 5.*Hab.* Sardinia.

7. PELOPŒUS VIOLACEUS.

B.M.

Sphex violacea, *Fabr. Ent. Syst.* ii. 201. 12.Pepsis violacea, *Fabr. Syst. Piez.* 211. 16.Chalybion violaceum, *Dahlb. Hym. Europ.* i. 432. 1.Pelopœus flebilis, *St. Farg. Hym.* iii. 321. 22.*Hab.* Smyrna; Constantinople.

8. PELOPŒUS ARABS.

B.M.

Pelopœus arabs, *St. Farg. Hym.* iii. 309. 7.*Hab.* Arabia; Turkey.

9. *PELOPÆUS TIBIALIS*.

B.M.

Sphex tibialis, *Fabr. Ent. Syst.* ii. 202. 17.*Pepsis tibialis*, *Fabr. Syst. Piez.* 212. 21.*St. Farg. Hym.* iii. 323. 24.*Hab.* Cape of Good Hope.10. *PELOPÆUS CHALYBEUS*.

B.M.

Female. Length 8 lines.—Deep blue: head strongly and closely punctured; the clypeus convex; the mandibles and one or two of the basal joints of the flagellum obscurely ferruginous. Thorax: the pro- and mesothorax with a central longitudinal impressed line, sparingly punctured and shining; wings black, with a violet iridescence; the metathorax blue-green, closely punctured, the apex rugose. Abdomen smooth and shining.

The male has the antennæ and mandibles black, or the latter very obscurely ferruginous in the middle, the metathorax concolorous, and the tarsi obscurely rufo-testaceous.

Hab. Port Natal; the Gambia.11. *PELOPÆUS FUSCIPENNIS*.

B.M.

Female. Length $9\frac{1}{4}$ lines.—Head and thorax black; the face thinly covered with griseous down and finely punctured; the mandibles, clypeus anteriorly, and the antennæ ferruginous; five or six of the apical joints of the flagellum black. Thorax: the pro- and mesothorax, as well as the scutellum, shining and sparingly punctured, each having a central depression; the metathorax transversely wrinkled, coarsely so at the apex; wings dark fuscous, with a purple iridescence; the tegulæ violet; the legs ferruginous, the posterior femora and tibiæ more or less fuscous above. Abdomen purple, the petiole ferruginous towards the base.

Hab. Sierra Leone. (The Rev. D. F. Morgan.)12. *PELOPÆUS HEMIPTERUS*.

B.M.

Sphex hemiptera, *Fabr. Ent. Syst. Supp.* 244. 11.*Pelopæus hemipterus*, *Fabr. Syst. Piez.* 204. 7.*Dahlb. Hym. Europ.* i. 23. 4.*St. Farg. Hym.* iii. 311. 10.*Hab.* Isle of France; Africa.13. *PELOPÆUS LÆTUS*. Pl. VII. fig. 1.

B.M.

Female. Length 10–12 lines.—Black: the face densely clothed with golden pile, the head having a thin pale yellow pubescence;

the antennæ yellow, five or six of the apical joints black or fuscous; the mandibles ferruginous. Thorax: the collar, tegulæ, a stripe beneath the wings, the scutellum, post-scutellum, apex of the metathorax and the legs yellow; the scutellum and post-scutellum longitudinally striated; the metathorax with a central longitudinal depression, obliquely striated; the anterior and intermediate coxæ and trochanters, the posterior coxæ at their base, and the apical half of the posterior femora, black; the extreme base of the posterior tibiæ, their apex, and also the apical joint of the posterior tarsi, black; the wings hyaline, the nervures pale ferruginous. Abdomen: the petiole, the first segment, the fourth segment more or less, and the fifth and sixth entirely yellow.

Male. Length 9 lines.—Differs only in having the yellow parts paler and brighter.

Hab. Australia (Port Essington; Macintyre River; Swan River); Ceram.

Specimens received from Swan River have the yellow spots on the scutellum and metathorax nearly or quite obsolete.

14. PELOPCEUS FORMOSUS.

B.M.

Female. Length $8\frac{1}{2}$ lines.—Black: the clypeus, scape, and four basal joints of the flagellum yellow: the latter are black at the sides; the mandibles ferruginous; the face clothed with golden pile. Thorax: the collar, tegulæ, a stripe beneath the wings, the scutellum, a spot on each side of the metathorax at its base, a larger one at its apex, and two oblong approximate spots in the middle, yellow; the meso- and metathorax transversely striated; the legs yellow; the coxæ black, the intermediate and posterior pairs spotted with yellow; the trochanters black, the intermediate and posterior pairs yellow at their apex; the extreme base of the anterior and intermediate femora, the posterior pair, except their base and apex, black; wings hyaline, the anterior pair fuscous at their tips, the nervures ferruginous. Abdomen: the petiole, the first segment, the fourth more or less, and the fifth and sixth entirely yellow.

Hab. Australia.

15. PELOPCEUS BENGALENSIS.

B.M.

Chalybion Bengalensis, *Dahlb. Hym. Europ.* i. 433. 2.

Pelopceus violaceus, *St. Farg. Hym.* iii. 321. 22.

Chalybion pruinosa, *Dahlb. Hym. Europ.* i. 433 (var.).

Hab. India (Madras, Bengal); Philippine Islands; China; Isle of France.

16. *PELOPCEUS JAVANUS*.

B.M.

Pelopceus Javanus, *St. Farg. Hym.* iii. 309. 6.*Hab.* Java.17. *PELOPCEUS MADRASPATANUS*.

B.M.

Sphex Madraspatana, *Fabr. Ent. Syst.* ii. 204. 25.*Pelopceus Madraspatanus*, *Fabr. Syst. Piez.* 203. 3.*Dahlb. Hym. Europ.* i. 22. 3.*Hab.* Malabar; Madras; Nepaul; Bengal.18. *PELOPCEUS SOLIERI*.*Pelopceus Solieri*, *St. Farg. Hym.* iii. 318. 18.*Hab.* India. (Coll. W. W. Saunders, Esq.)19. *PELOPCEUS SPINOLÆ*.

B.M.

Pelopceus Spinolæ, *St. Farg. Hym.* iii. 307. 4.*Hab.* Bombay; Ceylon.20. *PELOPCEUS DEFORMIS*.

B.M.

Female. Length 8 lines.—Black: the clypeus and scape in front yellow; the anterior margin of the clypeus and the mandibles ferruginous; the face covered with golden pile, the head thinly covered with long pale pubescence. Thorax: the posterior margin of the prothorax, the tegulæ, a stripe beneath the wings and another on the scutellum, a small spot on each side of the metathorax at the base and a larger spot at its apex, yellow; the meso- and metathorax transversely striated; the anterior and intermediate tibiæ yellow in front; the posterior tibiæ within and all the femora beneath ferruginous. Abdomen: the petiole black; the first segment entirely and the apical margins of the following segments of a reddish-yellow: the wings subhyaline, their nervures ferruginous.

Hab. North China. (Coll. R. Fortune, Esq.)21. *PELOPCEUS COROMANDELICUS*.

B.M.

Pelopceus Coromandelicus, *St. Farg. Hym.* iii. 306. 2.*Pelopceus fuscus*, *St. Farg. Hym.* iii. 311. 9 (var.).*Hab.* Coromandel; Central India.22. *PELOPCEUS PICTUS*.

Male. Length $7\frac{1}{2}$ lines.—Black: the face clothed with short silvery pubescence; the scape in front and the tips yellow. Tho-

rax: the collar, tegulæ, a stripe beneath the wings, the scutellum and post-scutellum yellow; a spot on each side of the metathorax at its base, the whole of the posterior portion above, and a broad stripe on each side of the enclosed portion uniting behind, yellow; the mesothorax obliquely striated inwardly; the wings slightly coloured, their tips fuscous; the anterior and intermediate legs yellow, the coxæ, trochanters and base of the femora black, the apical joints of the tarsi fusco-ferruginous; the posterior legs black; the tips of the coxæ, the trochanters, base of the femora and tibiæ, and the basal joint of the tarsi, yellow, the apical joints of the latter fusco-ferruginous. Abdomen black, the petiole yellow.

Hab. India. (Coll. W. W. Saunders, Esq.)

It is possible that this may prove to be only a highly-coloured local variety of *P. Madraspatanus*.

23. PELOPÆUS RUFOPICTUS.

B.M.

Female. Length 8 lines.—Black: the head and thorax thinly covered with pale fulvous pubescence; the face thinly covered with golden pile; the scape of the antennæ, the clypeus and mandibles, ferruginous; the apex of the third and fourth joints of the antennæ ferruginous beneath, the base of the latter black. Thorax: a line on the collar, a transverse spot on the scutellum, the apex of the metathorax, and a spot on each side of the metathorax at its base, reddish-yellow; the legs ferruginous, the coxæ and trochanters black; the meso- and metathorax transversely striated; the wings yellow-hyaline, the nervures and tegulæ ferruginous; the apex of the superior wings with a fuscous cloud. Abdomen: the petiole black and curved; the first segment, the apical margins of the second, fourth and fifth with a narrow fascia, and the apical margin of the third with a broad band, reddish-yellow; the apical segment ferruginous.

Hab. Celebes.

This species closely resembles the *P. difformis* from North China, but it differs too much in colouring to justify its being considered a mere variety.

24. PELOPÆUS CÆRULEUS.

B.M.

Sphex cærulea, Linn. *Syst. Nat.* i. 941. 2.

Sphex cyanea, Fabr. *Ent. Syst.* ii. 201. 13.

De Geer, *Ins.* iii. 589. 6. t. 30. f. 6.

Pepsis cyanea, Fabr. *Syst. Piez.* 211. 17.

Chalybion cyaneum, Dahlb. *Hym. Europ.* i. 22. 3.

Pelopæus cæruleus, St. Farg. *Hym.* iii. 320. 20.

Hab. North America; Carolina; East Florida.

25. *PELOPÆUS FLAVIPES*.

B.M.

Sphex flavipes, *Fabr. Ent. Syst.* ii. 202. 18.*Pelopæus flavipes*, *Fabr. Syst. Piez.* 204. 9.*Pelopæus architectus*, *St. Farg. Hym.* iii. 313. 12.*Hab.* North America.

This species varies in having the apex of the metathorax more or less yellow, and sometimes entirely black; the latter variety is the *P. architectus* of St. Fargeau.

26. *PELOPÆUS SERVILLEI*.*Pelopæus Servillei*, *St. Farg. Hym.* iii. 313. 13.*Hab.* New Orleans.27. *PELOPÆUS CANADENSIS*.

B.M.

Male. Length 8 lines.—Black: the face clothed with short silvery pubescence; the clypeus produced and notched in the middle; the tips of the mandibles ferruginous; the scape yellow. Thorax: a subinterrupted line on the collar, the tegulæ, a spot on the scutellum and post-scutellum, and two spots at the apex of the metathorax, yellow; the metathorax transversely striated, with a deep longitudinal channel in the enclosed portion of the metathorax; the mesothorax finely rugose, running into striæ towards the scutellum, over which the striæ also run; wings slightly coloured, their tips fuscous, the nervures ferruginous; the apex of the anterior femora, the tibiæ and tarsi, yellow, two or three of the apical joints of the latter fuscous; the posterior tibiæ at their base and the three basal joints of the tarsi yellow. Abdomen: the dilated portion of the petiole yellow on each side.

Hab. Canada.28. *PELOPÆUS FISTULARIS*.

B.M.

Pelopæus fistularis, *Dahlb. Hym. Europ.* i. 23. 8.*Pelopæus histrio*, *St. Farg. Hym.* iii. 316. 16.*Ericks. Faun. et Fl. Brit. Guiana*, iii. 588.*Hab.* Brazil; Cayenne.29. *PELOPÆUS BIMACULATUS*.

B.M.

Pelopæus bimaculatus, *St. Farg. Hym.* iii. 319. 19.*Hab.* Cayenne; Columbia.

This is in all probability a variety of *P. figulus*.

30. PELOPŒUS FIGULUS.

B.M.

Pelopœus figulus, *Dahlb. Hym. Europ.* i. 23. 6.Pelopœus vindex, *St. Farg. Hym.* iii. 317. 17.*Erichs. Faun. et Fl. Brit. Guiana*, iii. 588.*Hab.* Cayenne; Rio Grande; Honduras; St. Domingo; British Guiana.

31. PELOPŒUS CEMENTARIUS.

B.M.

Sphex cementaria, *Drury, Exot. Ins.* i. 105. t. 44. f. 6, 8.Sphex flavipunctata, *Christ. Hym.* 301. t. 30. f. 1.Sphex lunata, *Fabr. Ent. Syst.* ii. 203. 20.Pelopœus lunatus, *Fabr. Syst. Piez.* 203. 4.*Pal. de Beauv. Ins. Afric. et Amér.* 50. t. 7. f. 4.*Guér. Icon. Règ. Anim.* p. 436. t. 70. f. 5.*Dahlb. Hym. Europ.* i. 23. 5.*St. Farg. Encycl. Méth.* x. 35. 5; *Hym.* iii. 312. 11.Guêpe Ichneumon, *De Geer, Ins.* iii. 588. 4. t. 30. f. 4.Pelopœus affinis, *Fabr. Syst. Piez.* 204. 5 (var.).*Hab.* Antigua; St. Christopher's; Jamaica; St. Domingo; Cayenne.

32. PELOPŒUS FASCIATUS.

B.M.

Pelopœus fasciatus, *St. Farg. Hym.* iii. 315. 15.*Hab.* St. Domingo.

33. PELOPŒUS JAMAICENSIS.

Sphex Jamaicensis, *Fabr. Ent. Syst.* ii. 203. 22.Pelopœus Jamaicensis, *Fabr. Syst. Piez.* 204. 6 (var. *P. lunatus?*).*Hab.* Jamaica.

34. PELOPŒUS CHILENSIS.

Pelopœus Chilensis, *Spin. Gay's Chili*, vi. 395. 1.*Hab.* Chili.

Genus 6. PODIUM.

Pepsis, pt., *Fabr. Syst. Piez.* 210 (1804).Podium, *Fabr. Syst. Piez.* 183. 30 (1804).

1. **PODIUM RUFIPES.**

B.M.

Podium rufipes, *Fabr. Syst. Piez.* 183. 1.*Latr. Gen. Crust. et Ins.* iv. 59.*Dahlb. Hym. Europ.* i. 24.*Hab.* South America; St. Domingo.2. **PODIUM LUTEIPENNIS.** Pl. VI. fig. 2.

B.M.

Pepsis luteipennis, *Fabr. Syst. Piez.* 210. 10.*Podium flavipenne*, *Latr. Gen. Crust. et Ins.* iv. 59.*St. Farg. Encycl. Méth.* x. 164. 1.*Podium luteipenne*, *Dahlb. Hym. Europ.* i. 23.*St. Farg. Hym.* iii. 324. 2.*Podium Latreillei*, *Spin. Mem. Accad. Torino*, xiii. ser. 2. p. 51.*Hab.* Brazil (Para); Cayenne.3. **PODIUM CONSANGUINEUM.**

B.M.

Female. Length $8\frac{1}{2}$ lines.—Black and shining: the face strongly punctured, the vertex sparingly and delicately so. Thorax strongly punctured, the punctures distant on the mesothorax and scutellum, which are highly polished; the anterior and intermediate femora, tibiæ and tarsi ferruginous; the femora black at their base, the tibiæ and tarsi fuscous above; wings flavo-hyaline, the nervures and tegulæ pale ferruginous; the calcaræ ferruginous. Abdomen smooth, shining and impunctate.

Hab. South America.

4. **PODIUM HÆMATOGASTRUM.**

B.M.

Podium hæmatogastrum, *Spin. Mem. Accad. Torino*, xiii. 50. 33.*Hab.* Brazil (Para; Tapajos).5. **PODIUM NITIDUM.**

B.M.

Podium nitidum, *Spin. Mem. Accad. Torino*, xiii. 49. 32.*Hab.* Brazil (Para).6. **PODIUM LUCTUOSUM.**

Female. Length 10 lines.—Black: head and thorax shining, finely and distantly punctured; the metathorax closely punctured; the head, thorax and petiole covered with long black pubescence; the tips of the mandibles, tibiæ, tarsi, and apex of the femora, ferruginous; wings dark brown with a violet iridescence; the abdomen smooth, shining and impunctate.

Hab. North Carolina. (Coll. F. Smith.)

7. *PODIUM OPALINUM*.

B.M.

Female. Length $6\frac{1}{2}$ lines.—Black: the head shining and delicately punctured, with a thinly scattered long black pubescence. Thorax: the mesothorax and scutellum highly polished, and having a few scattered delicate punctures; the metathorax closely punctured; in the centre a deeply impressed longitudinal channel; the thorax, coxæ and trochanters, and also the petiole of the abdomen, with thinly scattered long black hairs; the anterior wings fuscous, with a brilliant violet iridescence and two fasciæ, the first crossing at the apex of the externo-medial cell, the second passing over the second submarginal cell; the posterior wings hyaline, with their apex slightly fuscous. The abdomen has a brilliant opaline iridescence.

Male. Length 6 lines.—This sex only differs in having the wings paler and the anterior tibiæ rufo-testaceous in front.

Hab. Jamaica.

This species appears to approach very closely to the *Ammophilus fumigatus* of Perty.

8. *PODIUM COMPLANATUM*.

Female. Length 10 lines.—Shining jet-black: the head compressed, sparingly and delicately punctured; the anterior margin of the clypeus emarginate. The prothorax elongate, the sides rounded, convex above, impunctate; the mesothorax, scutellum and post-scutellum impunctate; the metathorax flattened, longitudinally strigose-punctate at the base in the middle, the apical half with scattered delicate punctures; a central longitudinal slightly impressed line terminates in a fasciolet near the apex; the wings hyaline, with a narrow dark fascia crossing at the second submarginal cell, and a fuscous stain traversing the externo-medial nervure; the legs smooth and shining. Abdomen: flattened, highly polished and impunctate; the petiole bent, curving upwards.

Hab. South America. (Coll. W. W. Saunders, Esq.)

9. *PODIUM DENTICULATUM*.

Female. Length 8 lines.—Black: the face closely, the vertex distantly and delicately punctured; the clypeus armed with six acute teeth on its anterior margin; the sides of the face have a short silvery pubescence, the vertex and cheeks thinly clothed with long silvery hairs. Thorax: the mesothorax and scutellum have a few delicate scattered punctures and are smooth and shining; the metathorax, the sides and beneath more strongly and closely punctured; the prothorax has a central depression on its

posterior margin, and the mesothorax an abbreviated one at its base; the sides and the metathorax with a thinly scattered silvery-white pubescence; the anterior and intermediate tibiae and the femora at their apex ferruginous, the extreme base of the posterior tibiae ferruginous; wings hyaline, the superior pair have a fuscous fascia occupying the second submarginal cell; a fuscous stain traverses the posterior margin of the externo-medial cell; the apex of the wings is faintly clouded. Abdomen smooth, shining and impunctate.

Male.—This sex is rather smaller, more slender and pubescent; the clypeus is only armed with two teeth, which are longer than in the other sex and more acute; the abdomen is covered with a fine silky pilosity.

Var. *a*. The anterior and intermediate tibiae obscurely ferruginous.

Hab. Brazil. (Coll. F. Smith.)

Genus 7. STETHORECTUS.

Podium, Westw. *Griff. An. Kingd.* xv. 516 (1832).

Stethorectus, Smith, *Ann. & Mag. Nat. Hist.* xx. 394 (1847).

1. STETHORECTUS INGENS.

B. M.

Stethorectus ingens, Smith, *Ann. & Mag. Nat. Hist.* xx. 394. t. 23. f. 1 ♀, 2 ♂.

Podium giganteum, Erichs. *Faun. et Fl. Brit. Guiana*, iii. 589?

Hab. Brazil (Para); British Guiana.

2. STETHORECTUS NIGRIPES.

B. M.

Podium nigripes, Westw. *Griff. An. Kingd.* xv. 516. t. 76. f. 3.

Hab. Brazil.

Genus 8. CHLORION.

Sphex, pt., *Fabr. Ent. Syst.* ii. 206 (1793).

Chlorion, pt., *Latr. Hist. Nat. des Crust. et Ins.* iii. (1804).

Pronæus, Saund. *Trans. Ent. Soc.* iii. 58 (1841).

1. CHLORION LOBATUM.

B. M.

Sphex lobata, *Fabr. Ent. Syst.* ii. 206. 30.

Chlorion lobatum, *Latr. Gen. Crust. et Ins.* iv. 57.

Dahlb. Hym. Europ. i. 24. 1.

St. Farg. Hym. iii. 330. 3.

Chlorion azureum, *St. Farg. Encycl. Méth.* x. 451. 2; *Hym.* iii. 329. 1.

Hab. India; China.

An examination of a large number of specimens from various parts of India and China shows that this insect is very inconstant in colour, varying from brassy or golden green to dark blue; and the colour of the mandibles varies from ferruginous to black: no specific difference appears to exist.

2. *CHLORION CÆRULEUM.*

B.M.

Sphex cærulea, *Drury, Exot. Ins.* ii. 75. t. 39. f. 8.

Chlorion cyaneum, *Dahlb. Hym. Europ.* i. 24. 1.

Hab. North America; Mexico.

3. *CHLORION SPLENDIDUM.*

B.M.

Chlorion splendidum, *Fabr. Syst. Piez.* 218. 5.

Smith, Ann. & Mag. Nat. Hist. vii. 32 (1851).

Pronæus Campbellii, *Saund. Trans. Ent. Soc. Lond.* iii. 58. t. 5. f. 1 ♀.

Sphex pulchra, *St. Farg. Hym.* iii. 355. 31 ♂.

Hab. Northern India.

4. *CHLORION VIRIDI-CÆRULEUM.*

B.M.

Chlorion viridi-cæruleum, *Encycl. Méth.* x. 451. 1; *Hym.* iii. 330. 2.

Hab. Cayenne.

5. *CHLORION MELANOSOMA.*

B.M.

Female. Length 13–17 lines.—Black: the mandibles and clypeus, the scape and four or five of the basal joints of the flagellum ferruginous; the apical joints of the flagellum fuscous; the anterior tibiæ and tarsi ferruginous; the wings yellow, the apical margins of the anterior pair dark fuscous, the posterior margin of the hinder wings with a pale fuscous border, the nervures pale ferruginous, the tegulæ ferruginous behind. Thorax with scattered black pubescence; the prothorax transversely striated in front, elevated and deeply notched in the middle behind; the mesothorax smooth and shining, with an impressed line on each side over the tegulæ; the metathorax transversely striated; the abdomen smooth and shining; sometimes the abdomen has a chalybeous tint.

Hab. India (Pondicherry).

6. *Chlorion rugosum*.

B.M.

Male. Length 8-9 lines.—Head brassy-green, the margin of the vertex and the cheeks with long white pubescence; the face anteriorly thickly covered with short silvery-white pubescence; the vertex is very finely and very closely punctured, the face longitudinally rugose. Thorax rugose; the prothorax finely roughened, the mesothorax transversely rugose in front and obliquely so behind; the sides of the thorax coarsely strigose, the pectus with scattered shallow punctures; the tibiæ and tarsi black; the metathorax transversely coarsely striated; the wings fusco-hyaline, their apical margins with a dark fuscous border; abdomen smooth, shining and impunctate. The pro- and mesothorax brassy-green, the metathorax blue-green.

Hab. Sumatra.

Genus 9. *PRONÆUS*.

Dryinus, pt., *Fabr. Syst. Piez.* 200 (nec *Latr.*) (1804).

Pepsis, pt., *Pal. de Beauv. Ins. Afric. et Amér.* 39. t. 1. f. 1 (1805).

Pronæus, *Latr. Gen. Crust. et Ins.* iv. 56 (1809).

The genus *Pronæus* very closely approaches to *Chlorion*,—in fact contains its African representatives, which only differ from the Indian group in having the labial and maxillary palpi longer; the number of joints are the same, and the neururation of the wings identical; the antennæ of the males are grooved longitudinally, as in the genera *Chlorion* and *Spheg*.

1. *PRONÆUS MANDIBULARIS*.

B.M.

Chlorion mandibulare, *Fabr. Syst. Piez.* 218. 3 ♀.

Pronæus apicalis, *Guér. Voy. Abyss. (Lefeb.)* vi. 357, *Atlas*, t. 8. f. 5 & 6 ♂.

Hab. Guinea; Abyssinia; West Africa (Whydah).

2. *PRONÆUS MAXILLARIS*.

B.M.

Pepsis maxillaris, *Pal. de Beauv. Ins. Afric. et Amér.* 39. t. 1. f. 1 ♀.

Pronæus maxillaris, *Latr. Gen. Crust. et Ins.* iv. 56.

St. Farg. Hym. iii. 331. 1. t. 30. f. 1.

Hab. Africa.

3. *PRONÆUS ÆNEUS*.

Dryinus æneus, *Fabr. Syst. Piez.* 200. 1.

Pronæus æneus, *Latr. Gen. Crust. et Ins.* iv. 56.

Dahlb. Hym. Europ. i. 24. 1.

Hab. Guinea; Port Natal.

4. *PRONÆUS INSTABILIS*.

B.M.

Female. Length 15–20 lines.—Head black; the inner orbit narrowly and the outer orbit of the eyes broadly rufo-testaceous; the antennæ and face anteriorly rufo-testaceous, the mandibles ferruginous; the head is sometimes rufo-testaceous, with merely a black stain enclosing the ocelli; the mandibles fringed beneath with long hairs. Thorax of an obscure blue-black; sometimes the metathorax is tinged with green; the pro- and mesothorax more or less rufo-testaceous, rarely quite black; the wings nigro-cæruleous; the legs pale ferruginous, the coxæ and trochanters black or fuscous; the abdomen blue with purple iridescence, the apical segment pale ferruginous: in some examples the apical margins of the second and following segments are more or less rufo-piceous.

Male. Length 11 lines.—The male has the antennæ pale fulvous; the head, pro- and mesothorax above, the tegulæ and legs pale ferruginous; the three apical segments of the abdomen are also pale.

Hab. Africa (Guinea; Congo).

5. *PRONÆUS AFFINIS*.

B.M.

Female. Length 17 lines.—Black: the labrum, anterior margin of the clypeus, the mandibles and antennæ, ferruginous. Thorax clothed above with a short black velvety pubescence; the prothorax with a broad, longitudinal, shallow impressed line or channel; wings as in *P. instabilis*; the tibiæ, tarsi and tips of the femora ferruginous; abdomen obscure blue-black, the apical segment ferruginous.

Male. Length 12 lines.—Thorax and abdomen as in the female; the antennæ, mandibles and legs pale ferruginous; the coxæ, trochanters and base of the femora black.

Hub. Port Natal.

Genus 10. SPHEX.

Sphex, pt., *Fabr. Ent. Syst.* ii. 198 (1793).

Pepsis, pt., *Fabr. Syst. Piez.* 207 (1804).

The genus *Sphex*, as treated in this Catalogue, contains those species only which possess the characteristics of the *Sphex flavipennis* of Fabricius.

Head as wide as the thorax; eyes ovate; antennæ filiform, inserted near the base of the clypeus, grooved more or less longitudinally in the males, inserted near the base of the clypeus; mandibles large and arcuate, bidentate within, the teeth notched at their base, forming a rudimentary tooth; the apical tooth acuminate. Thorax elongate-ovate, truncated behind; the collar transverse; the anterior wings with one marginal and three sub-marginal cells; the marginal cell elongate, rounded at its apex; the first submarginal cell as long as the two following; the second more or less obliquely quadrate, receiving the first recurrent nervure at or near its apex; the third forming a truncated triangle, its posterior margin more or less rounded, receiving the second recurrent nervure about the middle; the anterior tarsi ciliated in the females; the claws bidentate beneath at their base. Abdomen conically ovate.

1. SPHEX FLAVIPENNIS.

B.M.

Sphex flavipennis, Fabr. Ent. Syst. ii. 201. 10.

Latr. Hist. Nat. xiii. 293. 3.

Jurine, Hym. 129. t. 8. gen. 5. fam. 2.

Akrens, Faun. Europ. 4. 18.

Van d. Lind, Obs. i. 94. 1.

Shuck. Foss. Hym. iii. 349. 1.

St. Farg. Hym. iii. 349. 23.

Lucas, Explo. Sc. Algér. iii. 271.

Sphex maxillosa, Fabr. Ent. Syst. ii. 208. 37.

Dahlb. Hym. Europ. i. 26. 9.

Lucas, Explo. Sc. Algér. iii. 271.

Pepsis flavipennis, Fabr. Syst. Piez. 210. 13.

Pepsis maxillosa, Fabr. Syst. Piez. 213. 27.

Sphex triangulum, Brullé, Expéd. Sc. Morée, iii. 365. 807, Atlas, t. 50. f. 6 ♀.

Sphex rufo-cincta, Brullé, Expéd. Sc. Morée, iii. 367. 809, Atlas, t. 50. f. 7 ♂.

Hab. Britain?; France; Italy; Germany; Greece; Portugal; The Morea; Algeria.

An examination of a number of specimens shows that the colour of the pubescence on the face of this insect varies; it is usually silvery, but in some examples inclines to a golden tint; the latter is the colour described by Fabricius.

2. SPHEX OCCITANICA.

Sphex Occitanica, *St. Farg. et Serv. Encycl. Méth.* x. 462. 1 ♂.
St. Farg. Hym. iii. 348. 21.

Hab. Montpellier.

This is probably a variety of the male of *Sphex emarginata* of Brullé, the principal difference being that the second segment of the abdomen is more red than in any example which has been received of that species.

3. SPHEX PRODITOR.

Sphex proditor, *St. Farg. Hym.* iii. 354. 29.

Hab. Corsica.

4. SPHEX EMARGINATA.

Sphex argyria, *Brullé, Expéd. Sc. Morée*, iii. 367. 810. t. 50. f. 8 ♀.
Sphex emarginata, *Brullé, Expéd. Sc. Morée*, iii. 368. 811, *Atlas*,
t. 50. f. 9 ♂.

Hab. The Morea; Albania. (Coll. S. S. Saunders, Esq.)

5. SPHEX LEUCONOTA.

Sphex leuconota, *Brullé, Expéd. Sc. Morée*, iii. 366. 808.

Hab. The Morea.

6. SPHEX SUBFUSCATA.

Sphex subfuscata, *Dahlb. Hym. Europ.* i. 436. 4.

Hab. Turkey.

7. SPHEX FERA.

Sphex fera, *Dahlb. Hym. Europ.* i. 26. 8.

Hab. Greece.

8. SPHEX PRUINOSA.

Sphex pruinosa, *Germ. Reise Dalm.* 261. 348.
Van d. Lind, Obs. i. 94. 3.

Hab. Dalmatia.

9. SPHEX BICOLOR.

Sphex bicolor, *Dahlb. Hym. Europ.* i. 437. 17.

Hab. Dalmatia.

10. *SPHEX CONFINIS*.*Sphex confinis*, *Dahlb. Hym. Europ.* i. 437. 16.*Hab.* Dalmatia.11. *SPHEX CINEREO-RUFO-CINCTA*.*Sphex cinereo-rufocincta*, *Dahlb. Hym. Europ.* i. 438. 19.*Hab.* Rhodes.12. *SPHEX SOROR*.*Sphex soror*, *Dahlb. Hym. Europ.* i. 436. 7.*Hab.* Rhodes.13. *SPHEX SORDIDA*.*Sphex sordida*, *Dahlb. Hym. Europ.* i. 436. 3.*Hab.* Rhodes.14. *SPHEX SOLIERI*.*Sphex Solieri*, *St. Farg. Hym.* iii. 354. 28.*Hab.* — ?15. *SPHEX FUSCATA*.*Sphex fuscata*, *Dahlb. Hym. Europ.* i. 25. 2.*Hab.* — ?16. *SPHEX FUSCA*.*Sphex fusca*, *St. Farg. Hym.* iii. 335. 2.*Hab.* — ?17. *SPHEX DIVES*.*Sphex dives*, *St. Farg. Hym.* iii. 359. 36.*Hab.* — ?18. *SPHEX HÆMORRHOIDALIS*.

B.M.

Sphex hæmorrhoidalis, *Fabr. Ent. Syst.* ii. 200. 7, and *Cab. Banks.**Mus. Linn. Soc.**Pepsis hæmorrhoidalis*, *Fabr. Syst. Piez.* 209. 8.*Hab.* Africa.

19. SPHEX CASTANEIPES.

Sphex castaneipes, *Dahlb. Hym. Europ.* i. 27. 12 & 438.

Hab. Africa.

20. SPHEX SUBTRUNCATA.

Sphex subtruncata, *Dahlb. Hym. Europ.* i. 25. 6.

Hab. Africa.

21. SPHEX GRATIOSA.

B.M.

Male. Length 12 lines.—The head, antennæ, prothorax, legs and abdomen ferruginous; the meso- and metathorax black; the prothorax black beneath; the mandibles ferruginous, with their tips black; a quadrate black spot on the vertex enclosing the ocelli; the enclosed portion of the metathorax transversely and finely striated, the apical portion of the metathorax transversely sulcated; the wings dark fuscous with a violet iridescence, the tegulæ ferruginous; the petiole and extreme base of the abdomen black: beneath, the second segment has a large fuscous spot at the base.

Hab. Tripoli.

22. SPHEX NIGRITA.

Sphex nigrita, *Lucas, Explo. Sc. Algér.* iii. 271.

Hab. Algeria.

23. SPHEX AFFINIS.

Sphex affinis, *Lucas, Explo. Sc. Algér.* iii. 272.

Hab. Algeria.

24. SPHEX AFRA.

B.M.

Sphex afra, *St. Farg. Hym.* iii. 350. 24. t. 30. f. 3 ♀.

Lucas, Explo. Sc. Algér. iii. 270. t. 14. f. 3.

Hab. Algeria (Oran).

25. SPHEX TRICHARGYRA.

Sphex trichargyra, *Spin. Ann. Soc. Ent. Fr.* vii. 466. 11 (1838).

Hab. Egypt.

This is probably a highly coloured example of *Priononyx albi-secta*, or certainly a closely allied species.

26. SPHEX OPTIMA.

Female. Length 13 lines.—Black : the face and cheeks densely clothed with rich golden pubescence; on the vertex are scattered a few erect fuscous hairs. The prothorax, sides and hinder margin of the mesothorax above, the tubercles and a spot beneath the wings, clothed with bright golden pubescence; the mesothorax has anteriorly a central, abbreviated, impressed line which is coated with golden pubescence; the post-scutellum has a spot on each side, and the apex of the metathorax is densely clothed with short silvery-white pubescence; there is also a silvery stripe on the sides at the insertion of the posterior coxæ; the metathorax is thinly covered with a changeable glittering pile, observable in different lights; a similar pile also covers the legs; wings yellowish hyaline, their apical margins clouded, the nervures black. Abdomen red, with the petiole and three apical segments black; the third segment has on each side an oblique fuscous line which unites in the middle of the segment; the fourth segment has its apical margin narrowly and obscurely ferruginous; the apical segment rugose. *Hab.* Africa (Gambia).

27. SPHEX BOHEMANNI.

B.M.

SpheX Bohemanni, *Dahlb. Hym. Europ.* i. 436. 9.

Hab. Port Natal.

28. SPHEX PELOPCEIFORMIS.

B.M.

SpheX pelopœiformis, *Dahlb. Hym. Europ.* i. 437. 12.

Hab. Port Natal.

The specific characters given by Dahlbom in his tabular synopsis are scarcely sufficient : in the insect for which Dahlbom's name is adopted, the head and thorax have a thin cinereous pubescence, and are closely punctured, particularly the metathorax; the scape in front, four or five of the basal joints of the flagellum beneath, the clypeus more or less, the mandibles, the coxæ and trochanters, the femora and tibiæ beneath, ferruginous; the wings dark fuscous, with a violet iridescence, the hinder pair pale at their margins towards their base; the petiole elongate; the abdomen oblong and pointed at the apex.

The male has no rufous colouring, but otherwise agrees with the female.

29. SPHEX PRASLINUS.

SpheX Praslinus, *Guér. Voy. Coq. Zool.* pt. 2. p. 262.

Hab. Port Praslin, New Ireland.

30. SPHEX CINERASCENS.

Sphex cinerascens, *Dahlb. Hym. Europ.* i. 25. 3 & 436. 10.

Hab. Guinea.

31. SPHEX DORYCUS.

Sphex Dorycus, *Guér. Voy. Coq. Zool.* pt. 2. p. 262.

Hab. New Guinea.

32. SPHEX PUBESCENS.

Sphex pubescens, *Fabr. Ent. Syst.* ii. 205. 28.

Syst. Piez. 212. 22.

Hab. Guinea.

33. SPHEX VARIPENNIS.

Sphex varipennis, *Reiche & Fairm. Voy. Fer. & Galin. Abyss.*
t. 29. f. 5, 6.

Guér. Voy. Abyss. Lefeb. vi. 354.

Hab. Abyssinia.

34. SPHEX EXIMIA.

Sphex eximia, *St. Farg. Hym.* iii. 360. 37.

Hab. Senegal.

35. SPHEX PAULINIERII.

Sphex Paulinierii, *Guér. Mag. Zool.* 1843, t. 114. f. 1.

Hab. Senegal.

36. SPHEX AMATOR.

Male. Length 10 lines.—Black: the face and thorax above densely clothed with short golden pubescence; the mandibles ferruginous in the middle; the wings hyaline, the nervures fusco-ferruginous, the apical margins of the superior wings slightly clouded; the legs have a fine pale silky pile, which is very dense on the posterior tibiae within; the abdomen has also a fine thin changeable silky pile; beneath, the two apical segments are densely covered with short golden pubescence.

Hab. Australia. (Coll. W. W. Saunders, Esq.)

37. SPHEX CANESCENS.

B.M.

Female. Length 10 lines.—Black: the face covered with short silvery pubescence, and having, as well as the cheeks, a long

thin cinereous pubescence; a denuded space down the middle of the clypeus, which has a few scattered punctures, its anterior margin rounded; the mandibles rufo-piceous, their apex sub-acute. Thorax thinly clothed with cinereous pubescence, most sparing on the mesothorax, which is moderately punctured, the punctures most sparing on the disk, and somewhat elongate; the scutellum punctured, and having a depression in the middle; the metathorax opaque and finely rugose; wings hyaline, their extreme base and apical margins slightly fuscous, the third sub-marginal cell much restricted towards the marginal. Abdomen ovate, shining, very convex, and with a fine cinereous pile at the base; the petiole not longer than the first segment; the apical segment rugose.

Male.—Very closely resembles the female, but has the anterior margin of the clypeus widely emarginate; the mesothorax is more closely punctured, and the abdomen not quite so shining; the two apical segments punctured.

Hab. Australia.

38. *SPHEX CARBONARIA*.

B.M.

Female. Length 13–15 lines.—Black: the face clothed with yellowish-white pubescence; a smooth shining space down the centre of the clypeus; the cheeks have a silvery pile, and have, as well as the vertex, a thinly scattered long white pubescence. Thorax: the pro- and mesothorax covered with silvery pubescence; when the pubescence is rubbed off, the mesothorax is found to be closely punctured, as well as the scutellum; the post-scutellum bituberculate; the metathorax clothed with white pubescence; wings hyaline, a pale fuscous spot beyond the marginal cell; the nervures ferruginous. Abdomen smooth and shining; the petiole covered with white pubescence.

Hab. Australia (Sydney).

39. *SPHEX CLAVIGERA*.

Female. Length 11 lines.—Black: head closely and rather finely punctured, the face densely clothed with silvery pubescence; tips of the mandibles ferruginous. Thorax subopaque, closely punctured; the metathorax shagreened and thinly covered with yellowish-white pubescence, the sides of the thorax and beneath have a similar pubescence; the coxæ, trochanters and femora beneath closely punctured; the legs stout and spinose, the spines short and sparing; the wings yellow-hyaline, the apical margins fuscous. Abdomen clavate, smooth and shining, covered, particularly towards the base, with a fine reflective silky pile.

Hab. Australia.

cence; the scutellum and post-scutellum naked, the latter notched in the middle; the metathorax very densely clothed with long silvery pubescence; wings hyaline, the nervures fusco-ferruginous, the base of the wings and the costal cell fuscous, the apex of the anterior wings with a fuscous cloud. Abdomen smooth, shining and impunctate.

Hab. Australia (Port Essington).

This is possibly the female of *S. opulenta*; but, not coming from the same locality, they are separated.

46. *SPHEX OPULENTA*.

B.M.

Male. Length $10\frac{1}{2}$ lines.—Black: the face densely clothed with bright golden pubescence, that on the cheeks is less dense and paler; the mandibles acute at their apex. The pro- and mesothorax above clothed with golden pubescence, the post-scutellum has a similar clothing; the sides of the thorax and the pectus have a thin pale pubescence; the metathorax very densely clothed with silvery-white pubescence; the legs have a changeable thin silvery pile; wings hyaline, smoky at the base, slightly clouded at their apical margins, and having a fuscous spot beyond the marginal cell. Abdomen subopaque, with a thin changeable iridescent pile; the petiole covered with silvery-white pubescence.

Hab. Australia (Richmond River).

47. *SPHEX LUCTUOSA*.

B.M.

Female. Length 13–15 lines.—Black and shining: the face covered with a thin fine silvery pile and a long stiff black pubescence; the cheeks have a silvery pile and a thin long fuscous pubescence; on the vertex the pubescence is long, thin and cinereous. The thorax, except the mesothorax above and the scutellum, thinly covered with short cinereous pubescence; the metathorax opaque, finely rugose; the mesothorax and scutellum very delicately punctured; the legs shining black, the tibiae and tarsi strongly spinose; the wings hyaline, dark fuscous at their base and along the outer margin of the externo-medial cell; the anterior wings are fuscous at their apical margins beyond the enclosed cells. Abdomen very smooth and shining, impunctate, and having a violet iridescence.

The male only differs in being smaller and in having the legs less spinose.

Hab. Australia (Swan River).

This species very closely resembles the *Sphex argentata* of Dahlbom, but in that species the mesothorax is opaque, the

puncturing being stronger and very close; the metathorax is proportionably shorter. In the present species the first recurrent nervure unites with the second transverse cubital nervure, which is not the case in *S. argentata*; the colouring of the wings is the same in both species.

48. SPHEX OBSCURELLA.

Female. Length 8 lines.—Black: the face densely clothed with silvery pubescence; the vertex shining, with scattered punctures, and having, as well as the cheeks, a long sparing pale yellowish-white pubescence; the thorax has a similar pubescence to the head, but it is more dense; the coxæ and femora are also pubescent; the wings hyaline, with a fuscous cloud at the apex of the anterior pair; the nervures fusco-ferruginous; the second submarginal cell subquadrate, rather longer than broad, receiving the first recurrent nervure about one-fourth from its apex, the third submarginal cell slightly restricted towards the marginal. Abdomen covered with a fine short silky pile; the petiole pubescent, nearly as long as the first and second segments.

The male closely resembles the female, but is more thickly pubescent, and the abdomen is more densely clothed with silky pile.

Hab. Van Diemen's Land. (Coll. F. Smith.)

This species most closely resembles *S. canescens*, but is at once distinguished by the form of the submarginal cells and by having a longer petiole.

49. SPHEX GLOBOSA.

B.M.

Female. Length 7 lines.—Black: the head and thorax opaque; the face covered with pale golden pubescence, leaving an angular denuded space on the clypeus, which is shining and has a few scattered punctures; the mandibles ferruginous, their apex black; the cheeks, thorax and legs have a short silky cinereous pile, the two former have also a thinly scattered pale glittering pubescence; the wings hyaline, their nervures rufo-fuscous; the mesothorax has a central abbreviated shallow groove anteriorly, and a slight scratch on each side over the tegulæ; the scutellum prominent, emarginate in the middle; the metathorax finely transversely rugose; the anterior tarsi strongly ciliated outside, the claws ferruginous. The petiole of the abdomen nearly as long as the two basal segments; the abdomen is globose and very smooth and shining, the base and the sides with short silvery-white pubescence; the apical margins of the segments narrowly rufo-piceous.

The male exactly corresponds with the female, but is usually smaller.

Hab. Van Diemen's Land.

This species has the appearance of a *Priononyx*, but the claws are only furnished with two teeth.

50. SPHEX ANTENNATA.

B.M.

Male. Length 8 lines.—Black: the face has a silvery pubescence and a mixture of long black hairs; the mandibles ferruginous towards their apex. The thorax has a scattered yellow pubescence; the mesothorax and scutellum evenly punctured, the former with a central abbreviated channel in front and a slight scratch over each tegula; the wings fuscous, the nervures black; the petiole short, the abdomen oblong-ovate.

Hab. New Hebrides (Anciteum).

The specimen described is not in good condition, being evidently denuded of pubescence; but it may be distinguished by the form of its antennæ, which are very slender at the base and gradually thickened towards the apex.

51. SPHEX RUFIPENNIS.

B.M.

Sphex rufipennis, *Fabr. Ent. Syst.* ii. 201. 10.

St. Farg. & Serv. Encycl. Méth. x. 462.

St. Farg. Hym. iii. 334. 1.

Dahlb. Hym. Europ. i. 436. 6.

Pepsis rufipennis, *Fabr. Syst. Piez.* 210. 12.

Hab. India? (*Fabr. l.c.*). Brazil.

Although several extensive collections have been examined, no species from India has been found agreeing with the description of *S. rufipennis*, but most collections contain Brazilian species which do agree with it; it is therefore probable that the habitat given by Fabricius—Tranquebar—is an error, and it is rendered more so from the circumstance of the typical specimen being in the collection of Lund, who collected in Brazil.

52. SPHEX ARGENTATA.

B.M.

Sphex argentata, *Dahlb. Hym. Europ.* i. 25. 1.

Sphex albifrons, *St. Farg. Hym.* iii. 337. 6 ♂.

Sphex argentifrons, *St. Farg. Hym.* iii. 337. 7 ♀.

Hab. Greece; India (Bengal; Madras; Punjaub; Sumatra); Java; N. America (St. John's Bluff, East Florida); Africa (Congo; Sierra Leone).

This may possibly be the *Pepsis albifrons* of Fabricius, but the description only points out the dark base of the wings, whereas the apex is dark also. The *Sphecx argentifrons* of St. Fargeau is the female, in which sex the metathorax is more distinctly striated than in the male: the species has a wide geographical range.

53. SPHEX VICINA.

B.M.

Sphecx vicina, St. Farg. *Hym.* iii. 343. 16.

Hab. India.

54. SPHEX FABRICII.

B.M.

Sphecx Fabricii, Dahlb. *Hym. Europ.* i. 27. 11 & 438. 21.

Hab. India; Tranquebar.

55. SPHEX FERRUGINEA.

B.M.

Sphecx ferruginea, St. Farg. *Hym.* iii. 345. 18.

Hab. India.

Amongst a number of specimens of this species from the Philippine Islands and others from Ceylon, some have the abdomen entirely black; this variety is probably the *Sphecx sericea* of Fabricius.

56. SPHEX FLAVO-VESTITA.

B.M.

Male. Length 12 lines.—Black: the head thinly covered with yellow pubescence, the face densely clothed with golden pubescence; the mandibles ferruginous, their base and apex black; the apical joints of the palpi ferruginous, one or two of the basal ones fuscous. Thorax thickly clothed with yellow pubescence; the prothorax above, the sides of the disk of the mesothorax, and the apex of the metathorax, densely covered with golden pubescence; the anterior coxæ and femora beneath are also covered with golden pubescence; the anterior femora, except their base, and all the tibiæ, tarsi and knees pale ferruginous; the apex of the claw-joint and the claws black; the wings yellowish-hyaline, the nervures pale ferruginous, the costal and post-costal nervures fuscous. Abdomen black with a blue tinge, and covered with a fine silky yellow pile.

Hab. India.

57. SPHEX APICALIS.

B.M.

Female. Length 13 lines.—Black: the pubescence on the head and thorax black, most dense on the face and cheeks; the

face covered with bright golden pile. The head and thorax finely punctured, most sparing on the disk of the mesothorax; the metathorax most strongly and closely punctured, the punctures confluent; wings fusco-hyaline, smoky towards their base, the apical margins faintly clouded; the nervures rufo-testaceous, the costal, post-costal, the externo-medial and anal nervures dark fuscous; the first and second segments of the abdomen black; the apical margin of the second and the following segments yellow, with a bright golden pile.

Hab. Sumatra.

58. *SPHEX LINEOLA*.

B.M.

Spheg lineola, *St. Farg. Hym.* iii. 353. 27.

Hab. Java; Sumatra; Hong Kong; North China.

59. *SPHEX NIGRIPES*.

B.M.

Female. Length 9-10 lines.—Opake-black: the head and thorax thinly sprinkled with black pubescence; wings fusco-hyaline, dark fuscous towards the base, with a yellowish tinge in the middle and fuscous at their apex; the nervures rufo-testaceous, towards the base of the wings they are darker; the femora and tibiae ferruginous; the tarsi black.

Hab. Sumatra; North China (Shanghai).

Some specimens from Sumatra have only the posterior femora ferruginous; those from China are similarly coloured; the wings in some examples are darker than in others.

60. *SPHEX FORMOSA*.

B.M.

Female. Length 10 lines.—Black: the face densely clothed with bright golden pubescence, the cheeks have also a golden pubescence, and the head a scattered long golden-yellow pubescence. The thorax is covered with golden pubescence of a rather paler colour than that on the face, the scutellum and a space beneath the wings usually naked, the pubescence densest on the metathorax; the legs covered with a fine silky pile; the wings fusco-hyaline, their apical margins fuscous, the nervures rufo-fuscous. Abdomen: the petiole about the length of the first segment; the abdomen has a blue tinge and is covered with a delicate silky pile.

Hab. Ceram. (Coll. Madame Ida Pfeiffer.)

61. *SPHEX MAURA*.

B.M.

Female. Length 11 lines.—Black: the face covered with short silvery pubescence, and thickly set with long black hairs; the thorax thinly covered with black pubescence, which is most dense on the metathorax; the thorax shining above, finely and sparingly punctured; the post-scutellum notched in the middle; the metathorax very finely transversely striated; the wings dark fuscous, with a violet iridescence; the abdomen smooth, shining and impunctate.

The male exactly corresponds with the female.

Hab. Celebes.

62. *SPHEX SERICEA*.

B.M.

Pepsis sericea, *Fabr. Syst. Piez.* 211. 19.

SpheX sericea, *Dahlb. Hym. Europ.* i. 26. 7. var.?

St. Farg. Hym. iii. 341. 12.

Hab. Islands of the Pacific; Philippine Islands; Java.

This species varies in having the scutellum black or red.

63. *SPHEX NIGELLA*.

B.M.

Female. Length 8 lines.—Black: the head, thorax and petiole with a thin griseous pubescence; the face densely covered with bright silvery pile; the anterior margin of the clypeus has two approximate short teeth in the middle; the mandibles very smooth and shining. Thorax: the disk opaque, very delicately punctured, the metathorax finely rugose; the wings subhyaline, slightly clouded at their apical margins, the nervures rufo-testaceous. Abdomen covered with a fine silky pile; the petiole as long as the two basal segments and curved upwards.

Male.—Closely resembles the female, but without teeth on the margin of the clypeus; the mandibles ferruginous and shining as in the other sex.

Hab. Shanghai.

64. *SPHEX PERPLEXA*.

B.M.

Male. Length 10 lines.—Black: the face covered with silvery pubescence; the head and thorax with a sparing black pubescence; the thorax finely rugose, the metathorax transversely so; the wings fusco-hyaline, their apical margins clouded. Abdomen very smooth and shining, the base of the first segment ferrugi-

nous, the apical margins of three or four of the basal segments narrowly rufo-piceous.

Hab. North China (Shanghai). (Coll. R. Fortune, Esq.)

This insect so closely resembles the male of *S. emarginata*, that, with the exception of the pale margins of the segments of the abdomen, there is scarcely another specific difference; both have the second submarginal cell narrow, which receives the first recurrent nervure in the middle.

65. SPHEX MANDARINIA.

B.M.

Female. Length 13 lines.—Black: the face covered with fine silvery pile; the anterior margin of the clypeus straight in the middle and sinuated at the sides; the vertex smooth and having a few scattered punctures; a few stiff black hairs scattered over the face. Thorax: the pro- and mesothorax very delicately punctured, interspersed with a few large punctures; a deep depression in the middle of the scutellum; the post-scutellum and metathorax opaque, the enclosed space above, finely rugose, the sides beyond obliquely strigose; the claws ferruginous; the tarsi furnished with stout spines, the anterior pair strongly ciliated outside; the tibiae with a few stout spines; the wings subhyaline, the nervures ferruginous, the apical margins slightly clouded; the second submarginal cell narrow, receiving the first recurrent nervure in the middle. Abdomen red, with the petiole and three apical segments black.

Hab. North China (Shanghai). (Coll. R. Fortune, Esq.)

This species may possibly be the *S. Solieri* of St. Fargeau.

66. SPHEX CYANIVENTRIS.

Pelopœus cyaniventris, Guér. *Voy. Coq. Zool.* pt. 2. p. 263, *Atlas*, t. 8. f. 15.

Spheg? *cyaniventris*, Spin. *Gay's Chili*, vi. 400. 4.

Hab. Brazil; Chili. (Coll. W. W. Saunders, Esq.)

67. SPHEX AURIFLUUS.

B.M.

Spheg aurifluus, Perty, *Del. An. Art.* p. 142. t. 37. f. 19.

Spheg ornata, St. Farg. *Hym.* iii. 344. 17.

Hab. Brazil (Rio Negro); Jamaica; Cuba.

68. SPHEX LANIERII.

B.M.

Spheg Lanierii, Guér. *Icon. Règ. Anim. Ins.* iii. 433. t. 70. f. 2.

Hab. Cuba; Brazil.

69. SPHEX MELANOPA.

Sphex melanopa, *Dahlb. Hym. Europ. i. 27. 13.*

Hab. Brazil.

70. SPHEX FULIGINOSA.

Sphex fuliginosa, *Dahlb. Hym. Europ. i. 25. 5.*

Hab. Brazil.

71. SPHEX CHRYSOBAPTA.

Female. Length 8 lines.—Black: the head and thorax covered with bright golden pubescence, exceedingly brilliant in different lights; the wings subhyaline, the nervures ferruginous; the anterior margins of the superior pair have a broad reddish-yellow stain; the legs fusco-ferruginous, the femora bright ferruginous above, and the tibiæ outwardly so; the apical joint of the tarsi dusky; the legs and abdomen covered with a fine reflective silky golden pile; the petiole as long as the two basal segments, ferruginous, as well as the apical margins of all the segments.

Hab. Brazil. (Coll. F. Smith.)

72. SPHEX CLYPEATA.

B.M.

Male. Length 10 lines.—Black: the face covered with silvery pubescence and sprinkled with long black hairs; the clypeus very convex, produced anteriorly, its margin truncated; the thorax has a thinly scattered black pubescence; the wings fuscohyaline; the nervures and extreme base of the wings dark fuscous, the apical margins with a pale fuscous cloud. The abdomen shining and covered with a fine grey silky pile; the apex fringed with curled yellow pubescence; the two apical segments beneath densely covered with similar pubescence.

Hab. Brazil.

73. SPHEX INGENS.

B.M.

Female. Length 18–20 lines.—Black: the head opake, thinly clothed with black pubescence; the clypeus has a few scattered punctures, margined in front, the margination obscurely ferruginous; the mandibles rugose towards their base; the palpi fuscous, with the tips of the joints pale ferruginous. Thorax clothed above with black pubescence, densely so on the metathorax; on the disk of the mesothorax is a short velvety pubescence; the anterior femora have an obscure ferruginous stripe beneath at their apex; wings rufo-fuscous, subhyaline, darkest at their

83. SPHEX LATREILLII.

B.M.

Sphex Latreillii, *St. Farg. Mag. Zool. t. 33* ♂ (1831); *Hym. iii.* 361. 38.

Dahlb. Hym. Europ. i. 27. 14 & 438. 24.

Spin. Gay's Chili, vi. 397. 1.

Sphex Thunbergii, *St. Farg. Mag. Zool. t. 34* ♀ (1831); *Hym. iii.* 362. 39.

Hab. Chili; Valparaiso.

84. SPHEX MELÆNA.

Sphex melæna, *Spin. Gay's Chili, vi.* 398. 2.

Hab. Chili.

85. SPHEX SPINOLÆ.

Sphex Chiliensis, *Spin. Gay's Chili, vi.* 399. 3 (nec *St. Farg.*).

Hab. Chili. (Coll. F. Smith.)

86. SPHEX OPACA.

Sphex opaca, *Dahlb. Hym. Europ. i.* 437. 14.

Hab. South America.

87. SPHEX JOHANNIS.

Pepsis Johannis, *Fabr. Syst. Piez.* 208. 3.

Hab. South America.

This is probably the *Priononyx striata* of this Catalogue. See the remarks following that species, p. 266.

88. SPHEX RUFIPES.

B.M.

Sphex rufipes, *St. Farg. Hym. iii.* 343. 15.

Hab. St. Domingo (Port-au-Prince).

89. SPHEX T.

Pepsis T, *Pal. de Beauv. Ins. p.* 117. t. 3. f. 5.

Hab. St. Domingo.

90. SPHEX JAMAICENSIS.

Vespa Jamaicensis, *Drury, Ill. Exot. Ins. i.* 104. t. 44. f. 4.

Hab. Jamaica.

91. SPHEX CALIGINOSA.

Sphex caliginosa, *Erichs. Faun. und Fl. Brit. Guiana*, iii. 589.

Hab. British Guiana.

92. SPHEX LATRO.

Sphex latro, *Erichs. Faun. und Fl. Brit. Guiana*, iii. 588.

Hab. British Guiana.

93. SPHEX SINGULARIS.

B.M.

Male. Length 9 lines.—Black: the face densely covered with golden pubescence, the vertex and cheeks with a long thin pale yellow pubescence. Thorax clothed with long thin pale golden pubescence; the prothorax above, the post-scutellum, and an epaulet over the tegulæ of short bright golden pile; the legs with a fine changeable silky pile, most dense on the coxæ and posterior tibiæ within; the wings hyaline, with a pale fuscous cloud at their apical margins and a darker one beyond the marginal cell; the third submarginal cell subpetiolate. The abdomen has an obscure chalybeous tinge, with a little silky pile at the base.

Hab. Honduras.

94. SPHEX PENNSYLVANICA.

B.M.

Sphex Pennsylvania, *Linn. Syst. Nat.* i. 941. 3.

De Geer, Ins. iii. 586. 2. t. 30. f. 2.

Fabr. Syst. Ent. 346. 3; *Ent. Syst.* ii. 201. 11.

Pal. de Beauv. Ins. Afric. et Amér. p. 116. t. 3. f. 4.

Dahlb. Hym. Europ. i. 25. 4.

St. Farg. Hym. iii. 335. 3.

Pepsis Pennsylvania, *Fabr. Syst. Piez.* 211. 15.

Sphex Servillei, *St. Farg. Hym.* iii. 336. 5 ♂.

Hab. North America; Pennsylvania.

95. SPHEX ICHNEUMONEA.

B.M.

Sphex ichneumonea, *Linn. Syst. Nat.* i. 959. 36.

De Geer, Ins. ii. 759. t. 32. f. 13. 17.

Fabr. Ent. Syst. ii. 207. 34.

Dahlb. Hym. Europ. i. 26. 10.

St. Farg. Hym. iii. 346. 19.

Erichs. Faun. und Fl. Brit. Guiana, iii. 589.

Chlorion ichneumoneum, *Fabr. Syst. Piez.* 219. 6.

Hab. North America; St. John's Bluff, East Florida; South Carolina.

96. SPHEX PHILADELPHICA.

Sphex Philadelphia, *St. Farg. Hym. Europ.* i. 340. 11.

Hab. Philadelphia.

97. SPHEX TIBIALIS.

Sphex tibialis, *St. Farg. Hym. Europ.* i. 339. 10.

Hab. Philadelphia. (Coll. W. W. Saunders, Esq.)

98. SPHEX VIOLACEIPENNIS.

Sphex violaceipennis, *St. Farg. Hym.* iii. 349. 22.

Hab. Philadelphia.

99. SPHEX CRÆSUS.

Sphex cræsus, *St. Farg. Hym.* iii. 351. 25.

Hab. North America; Mexico. (Coll. F. Smith.)

100. SPHEX DIMIDIATA.

Sphex dimidiata, *St. Farg. Hym.* iii. 352. 26.

Hab. North America.

101. SPHEX ELEGANS.

B.M.

Male. Length 7 lines.—Black: the face covered with a short rich golden pubescence, and sprinkled with long hairs of the same colour; the mandibles ferruginous at their apex. Thorax thinly covered with erect golden hairs; the mesothorax and scutellum evenly punctured; the metathorax opaque; wings yellow-hyaline, with a pale fuscous cloud at their apical margins, and a darker one beyond the marginal cell; the nervures pale ferruginous; the knees, tibiae and tarsi pale ferruginous; the tips of the claws black. Abdomen smooth and shining, with the apical margins of the segments obscurely rufo-testaceous; sometimes the two basal segments are ferruginous, with the base of the first, and base and apex of the second, black.

Hab. California.

102. SPHEX APICALIS.

B.M.

Sphex apicalis, *Harris, Cat. Ins. Massach.*

Male. Length 6-8 lines.—Black: the face covered with short silvery pubescence, and sprinkled with a mixture of long fuscous and pale hairs; the mandibles slightly ferruginous at their inner margin towards their apex; the vertex is shining, sparingly and

finely punctured, and thinly covered, as well as the cheeks, with long cinereous pubescence. Thorax: the mesothorax and scutellum shining and evenly punctured; the metathorax opaque and rather finely rugose; the thorax, coxæ and femora, as well as the petiole of the abdomen, thinly covered with erect cinereous pubescence; wings fusco-hyaline, the apical margins, as well as the anterior margin of the superior pair, with a darker fuscous cloud; the petiole as long as the two basal segments of the abdomen; the latter has a slight chalybeous tinge, and in some examples the apical margins of the segments are more or less pale testaceous.

Hab. East Florida (St. John's Bluff); Georgia.

103. SPHEX FLAVIPES.

Female. Length 13 lines.—Black: the face densely clothed with golden pubescence; the basal half of the mandibles ferruginous; the labrum has a central longitudinal carina, its apical margin is rounded. Thorax opaque; the posterior margin of the prothorax, the hinder margin of the tubercles, an epaulet over the tegulæ, the post-scutellum and apex of the metathorax, covered with short bright golden pubescence; the metathorax is thinly clothed with yellow pubescence; the wings dark fuscous; the tibiæ, tarsi and knees of a reddish-yellow, the spines of the same colour. Abdomen opaque, covered with a fine reflective silky pile.

Hab. Georgia. (Coll. F. Smith.)

This species resembles the *Sphex tibialis* of St. Fargeau, but that insect has fuscous pubescence on the head and thorax, and the spines on the legs are black.

104. SPHEX INSTABILIS.

Female. Length 9 lines.—Black: the face covered with pale golden pubescence, and sprinkled, as well as the cheeks, with longer pale pubescence; the mandibles ferruginous at the base. The pro- and mesothorax above are covered with a fine golden pile; the metathorax clothed with pale golden pubescence, the apex densely so; wings yellow-hyaline, the apical margins of the superior pair have a broad dark fuscous border, the apex of the inferior pair faintly clouded, the nervures pale testaceous; the intermediate and posterior tibiæ and tarsi fusco-ferruginous; in some examples they are bright ferruginous, as well as the posterior femora. The abdomen covered with a fine silky pile; in some examples the petiole is ferruginous.

Hab. North America.

Genus 11. HARPACTOPUS.

F. Smith, MSS.

This genus is formed for the reception of those species which differ from the typical *Spheæ* in the following particulars.

The second submarginal cell is narrowed towards the marginal and receives the first recurrent nervure towards the base; the second recurrent nervure is received by the third submarginal cell, a little within; the legs elongate, the tarsi densely spinose; the claws bidentate, the anterior pair with dense long cilia outside; the abdomen ovate, abruptly convex at the base, pointed at the apex.

1. HARPACTOPUS CRUELIS, n. s. Pl. VI. fig. 4. B.M.

Female. Length 12 lines.—Black: the face covered with silvery pubescence, and sprinkled with stiff bristly hairs; the cheeks and margin of the vertex have a black pubescence; the clypeus with a notch in the middle of the anterior margin, and having a longitudinal impressed line not quite extending to its base. The prothorax covered above with silvery pubescence; the mesothorax and scutellum roughly punctured, the latter is rugose-striate behind; the metathorax thickly clothed with black pubescence, and coarsely rugose; a raised acute tubercle in the middle of the post-scutellum, behind abruptly truncated; the legs elongate, stout and thickly spinose, particularly the tarsi; the anterior pair strongly ciliated outside; the claw-joint large, and set with strong bristles; wings yellow-hyaline, their outer margins hyaline, the apex of the anterior pair fuscous. Abdomen ovate, the apex acute, very convex, abruptly so at the base, and very smooth and shining.

Hab. Madras.

2. HARPACTOPUS TYRANNUS. B.M.

Female. Length 12 lines.—Black: the face has an indistinct silvery pubescence, that on the cheeks is black; the face thickly covered with stiff black hairs; the vertex rather finely punctured. Thorax rugose-punctate; the scutellum longitudinally strigose behind, sparingly punctured in front and slightly depressed in the middle; the post-scutellum with an elevated compressed tubercle in the middle; the metathorax abruptly truncated, and covered with long sooty-black pubescence; the legs as in *H. crudelis*; wings dark fuscous, their apical margins broadly subhyaline. Abdomen smooth and shining, the base subtruncate or abruptly elevated, very convex, acute at the apex.

Hab. Port Natal.

3. *HARPACTOPUS SÆVUS*.

B.M.

Female. Length 8-11 lines.—Black: the face densely covered with bright silvery pubescence; the clypeus sprinkled with stiff black bristly hairs; the vertex and cheeks have a thin cinereous pubescence. The pro- and mesothorax covered with pale golden pubescence; the metathorax transversely rugose; the wings hyaline, with more or less of a yellow tinge, their apical margins slightly clouded; the nervures pale rufo-testaceous; the tarsi thickly spined, the anterior pair strongly ciliated outside. Abdomen subglobose, very convex, with the petiole a little longer than the first segment.

The male only differs in being smaller and more pubescent.

Hab. Australia (Swan River; Cape Upstart).

4. *HARPACTOPUS NIVOSUS*.

B.M.

Female. Length 10-13 lines.—Ferruginous: the head, tips of the mandibles and flagellum black; the head, thorax, coxæ and base of the femora densely clothed with snow-white short silky pubescence; the other parts of the legs have a thin white pile; the spines at the apex of the tibiæ black, those on the tibiæ and tarsi are a mixture of black and red ones; the wings hyaline, the nervures fusco-ferruginous, the tegulæ ferruginous; the post-scutellum with a slightly raised tubercle in the middle. Abdomen: the petiole and first segment covered with snow-white pubescence; the apical margins of the segments pale rufo-testaceous.

Hab. Northern India.

Genus 12. *PRIONONYX*.

Sphex, pt., *Fabr. Ent. Syst.* ii. 198 (1793).

Pepsis, pt., *Fabr. Syst. Piez.* 207 (1804).

Priononyx, *Dahlb. Hym. Europ.* i. 28 (1843).

This genus differs from the genus *Sphex* in having the claws quadridentate beneath at their base; the neuration of the wings and the form of the abdomen are the same as in *Harpactopus*.

1. *PRIONONYX THOMÆ*.

B.M.

Sphex Thomæ, *Fabr. Ent. Syst.* ii. 199. 4.

Pepsis Thomæ, *Fabr. Syst. Piez.* 209. 5.

Priononyx Thomæ, *Dahlb. Hym. Europ.* i. 28. 1.

Hab. South America; Island of St. Thomas; Jamaica; Brazil (Santarem); South Carolina; East Florida.

Many of the examples of this species have the wings hyaline or subhyaline; this is the case in all from Brazil and in others from California; examples from Jamaica have them fuscous; beyond the difference in the colouring of the wings no specific distinction has been detected.

2. PRIONONYX ATRATA.

B.M.

Sphex atrata, *St. Farg. Hym.* iii. 355. 30.

Hab. North America.

St. Fargeau described this species from a specimen in Serville's Collection, its locality being unknown: it is the *Sphex labrosa* of Harris's Catalogue.

3. PRIONONYX DOUMERCI.

Sphex Doumerci, *St. Farg. Hym.* iii. 357. 33.

Hab. Cayenne; Brazil.

4. PRIONONYX STRIATA.

B.M.

Female. Length 10-11 lines.—Black: the face covered with silvery pile, and having, as well as the cheeks, a number of long white hairs; the anterior margin of the clypeus with a small notch in the middle. The mesothorax longitudinally finely strigose, the metathorax transversely so, and covered thinly with short cinereous pubescence; the scutellum bituberculate; the tibiæ and tarsi strongly spinose; the anterior tarsi with long cilia outside; the wings black, with a violet iridescence, their apical margins palest. Abdomen ferruginous, with the petiole black.

The male only differs in being smaller.

Hab. Brazil (Para; Villa Nova). (Coll. H. W. Bates.)

This is probably the *Pepsis Johannis* of Fabricius, and also the *Sphex Doumerci* of St. Fargeau; the former, however, does not notice the striation of the thorax, but points out the emargination of the scutellum, which is described here as bituberculate: St. Fargeau does not notice the form of the scutellum, but describes the *metathorax* as being transversely striated; the *mesothorax* he does not mention. Under these circumstances we have given another name and description to the species.

5. PRIONONYX ÆGYPTIA.

Sphex Ægyptia, *St. Farg. Hym.* iii. 356. 32.

Hab. Egypt.

Genus 13. PARASPHEX.

Enodia, *Dahlb. Hym. Europ.* i. 28 (1843), nec *Hübner. Lepidop.* (1816).

This genus is distinguished from *Sphex* proper by having the claws of the tarsi tridenticulate; the body is of a more slender and graceful form; the abdomen is more elongate and narrow, and very acute or lanceolate at the apex. It forms a distinct subgeneric division of the typical *Sphex*.

1. PARASPHEX FERVENS.

B.M.

Sphex fervens, *Fabr. Ent. Syst.* ii. 200. 5 (nec *Linn.*).

Pepsis fervens, *Fabr. Syst. Piez.* 209. 6.

Pepsis pubescens, *Fabr. Syst. Piez.* 212. 22.

Enodia canescens, *Dahlb. Hym. Europ.* i. 28. 2.

Enodia fervens, *Dahlb. Hym. Europ.* i. 439. 2.

Priononyx fervens, *Erichs. Faun. und Fl. Brit. Guiana*, iii. 589.

Hab. India (Madras; N. Bengal); Africa (Sierra Leone; Gambia; Cape of Good Hope).

The typical specimen of *P. fervens* is in the Banksian Cabinet; it is from India. The African specimens appear to be the *Pepsis pubescens* of Fabricius.

2. PARASPHEX ALBISECTA.

B.M.

Sphex albisecta, *St. Fargeau & Serv. Encycl. Méth.* x. 462. 2.

Ammophila Kirbii, *Van d. Lind, Obs.* i. 90. 7.

Sphex trichargyra, *Spin. Ann. Soc. Ent. Fr.* vii. 466. 11 (1838).

Enodia albisecta, *Dahlb. Hym. Europ.* i. 28. 1 & 438. 1.

Hab. South of France; Piedmont; Montpellier; Albania; Africa (Oran; Port Natal; Cape).

3. PARASPHEX MARGINATA.

B.M.

Female. Length 6½–8 lines.—Black: the scape and two basal joints of the flagellum more or less, as well as the mandibles, ferruginous, the latter black at their tips; the face and cheeks clothed with silvery pubescence; the thorax and coxæ thinly covered with short silvery-white pubescence; the meso- and metathorax nearly naked, the former with strong scattered punctures, the latter more finely punctured and indistinctly transversely striated; the tegulæ and legs red, with the coxæ and femora above more or less black; wings fusco-hyaline, the nervures ferruginous. Abdomen: the petiole and two basal segments red, the apical margin of the second sometimes black, or

rarely the petiole and base of the first segment only, red; the apical margins of all the segments white; the petiole nearly as long as the abdomen.

The male is rather smaller, and has the antennæ entirely black; the mandibles slightly ferruginous; the tegulæ more or less ferruginous: this sex is also usually more pubescent; the petiole and first segment red; but frequently the petiole is more or less fuscous, sometimes black.

This species very closely resembles *Enodia albisecta*; its principal differences consist in having a longer petiole and the meta-thorax substriated; the petiole, legs and mandibles are also more or less red.

Hab. Gambia.

Genus 14. DOLICHURUS.

Pompilus, pt., *Spin. Ins. Lig.* fasc. 2. 52 (1808).

Pison, *Latr. Gen. Crust. et Ins.* iv. 58 (1809).

Dolichurus, *Latr. Gen. Crust. et Ins.* iv. 387 (1809).

1. DOLICHURUS CORNICULUS.

B.M.

Pompilus corniculus, *Spin. Ins. Lig.* fasc. 2. 52.

Pison ater, *Latr. Gen. Crust. et Ins.* iv. 58.

Dolichurus ater, *Latr. idem*, 387.

Van d. Lind, Obs. i. 95.

Dolichurus corniculus, *St. Farg. Encycl. Méth.* x. 450.

Shuck. Foss. Hym. 85. 1.

Dahlb. Hym. Europ. i. 29. 13.

St. Farg. Hym. iii. 327. 1.

Wesm. Hym. Foss. Belg. 70. 1.

Hab. Europe.

Genus 15. AMPULEX.

Sphex, pt., *Fabr. Ent. Syst.* ii. 198 (1793).

Chlorion, pt., *Fabr. Syst. Piez.* 217 (1804).

Ampulex, *Jurine, Hym.* p. 134 (1807).

1. AMPULEX COMPRESSA.

B.M.

Sphex compressa, *Fabr. Ent. Syst.* ii. 206. 32; *Mant.* i. 275. 25.

Chlorion compressum, *Fabr. Syst. Piez.* 219. 7.

Latr. Hist. Nat. Crust. et Ins. xiii. 294.

Westw. Trans. Ent. Soc. Lond. iii. 227 (1843).

Ampulex compressa, *Jurine, Hym. p.* 134 (1807).

St. Farg. Encycl. Méth. x. 450; *Hym. iii.* 325. 1.

Dahlb. Hym. Europ. i. 29. 1.

Guêpe Ichneumon, *Reaum. Ins. vi.* 280. t. 28. f. 2, 3.

Hab. India; China; Isle of France; Java.

The neururation of the wings is very inconstant in this species, particularly in small examples of the male; the typical number of submarginal cells is three, but the first transverse cubital nervure is frequently obsolete, or partly so, thus making the number two.

2. AMPULEX SIBIRICA.

B.M.

Sphex sibirica, *Fabr. Ent. Syst. ii.* 207. 33, & *Cat. Mus. Linn. Soc.*

Chlorion sibiricum, *Fabr. Syst. Piez.* 218. 4.

Ampulex compressiventris, *Guér. Icon. Règ. Anim. iii.* t. 70. f. 4.

Ampulex Guerini, *Dahlb. Hym. Europ. i.* 29. 2.

Hab. Siberia? (*Fabr.*); Malabar; Senegal; Sierra Leone; The Gambia.

3. AMPULEX CUPREA.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Brassy-green, varying in tint in different lights; the carina on the face entire, arched, and produced at the apex; the head deeply rugose-punctate. The prothorax is transversely rugose-striate above, the sides being roughly punctured; the mesothorax covered with large deep punctures; the metathorax has a central carina which terminates before the apex; on each side is an abbreviated oblique one and a second entire oblique carina which unite at the apical margin of the truncation by a short transverse one; the lateral margins are raised, and the apical angles terminate in a stout bent tooth; the wings hyaline and iridescent, the nervures fusco-ferruginous. Abdomen shining, and having a few scattered delicate punctures.

Hab. China (Hong Kong).

In the Museum are two examples of this species; in both the first recurrent nervure is obsolete.

4. AMPULEX CYANIPES.

Chlorion cyanipes, *Westw. Trans. Ent. Soc. Lond. iii.* 230 ♂;

Arc. Ent. ii. 65. t. 65.

Hab. Cape of Good Hope.

5. AMPULEX PURPUREA.

B.M.

Chlorion purpureum, Westw. *Arc. Ent.* ii. 65 ♀.

Hab. Africa (Cape of Good Hope; Port Natal).

This species is subject to the same variation in the neururation of the wings as the typical species, *A. compressa*.

6. AMPULEX NEBULOSA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Green: the head, pro- and mesothorax covered with large deep confluent punctures; the clypeus with an elevated carina in the centre, its apex as well as the mandibles ferruginous; the antennæ black; the head with scattered erect long white hairs. The metathorax with one central and three lateral longitudinal oblique carinæ, between which it is transversely striated; the lateral apical margins of the verge of the truncation armed with a stout acute tooth; the truncation transversely rugose; the post-scutellum covered with silvery pubescence; thorax and legs with scattered erect pale pubescence; the posterior coxæ covered with silvery-white pubescence; the calcaria pale testaceous; the wings hyaline, a dark cloud crossing the anterior wings from the base of the marginal cell, occupying the apex of the first submarginal, the whole of the second, and the upper portion of the third discoidal cell. Abdomen strongly, but not very closely, punctured, the apex of the second segment and the whole of the following segments covered with silvery hairs.

Hab. Port Natal.

7. AMPULEX CHALYBEA, n. s. Pl. VII. fig. 3.

B.M.

Female. Length 9 lines.—Dark blue, variegated with bright purple tints; the mandibles, anterior tibiæ in front, and the knees, ferruginous; the antennæ and tarsi dark fuscous; the wings fuscous; the head coarsely punctured; the prothorax and sides of the mesothorax with large scattered punctures; the metathorax with a central longitudinal carina and three oblique ones on each side, the spaces between transversely striated; the apical angles produced into a stout sharp angular tooth; the abdomen impunctate.

Hab. Africa (Fantee).

This may possibly be the *A. fumipennis* of Dahlbom; but, as he does not mention the red mandibles and front of the anterior legs, it has not been considered advisable to adopt his name.

8. *AMPULEX ANGUSTICOLLIS*.

B.M.

Ampulex angusticollis, *Spin. Ann. Soc. Ent. Fr.* x. 108. 64 ♀.*Chlorion angusticolle*, *Westw. Arc. Ent.* ii. 66. 4.*Hab.* Cayenne; Brazil (Para).9. *AMPULEX ÆNEA*.*Ampulex ænea*, *Spin. Ann. Soc. Ent. Fr.* x. 110 ♀.*Chlorion æneum*, *Westw. Arc. Ent.* ii. 110.*Hab.* Cayenne.10. *AMPULEX THORACICA*.

B.M.

Male. Length $5\frac{1}{2}$ lines.—Blue-green: the head coarsely punctured, elongated and much narrowed behind the eyes; the carina on the face produced at the apex into an acute spine; the lateral angles of the face produced and acute. The pro- and mesothorax with large deep punctures; the prothorax elevated posteriorly, and transversely striated in front; the metathorax with a central and four lateral carinæ, the interstices transversely striated, the posterior angles terminating in long stout bent spines; the wings subhyaline, with two indistinct fuscous fasciæ, one crossing the second submarginal cell, the other traversing the apex of the externo-medial cell. Abdomen smooth, shining and impunctate.

Hab. Brazil (Villa Nova).This is probably the male of *Ampulex angusticollis*.11. *AMPULEX RAPTOR*.

B.M.

Male. Length 5 lines.—Bright green: head thickly and coarsely punctured; the clypeus carinated in the centre and produced into an acute spine at the apex. The pro- and mesothorax covered with large deep coarse punctures; the metathorax with a central carina and four lateral ones, between which it is transversely striated; the lateral apical margins of the superior surface produced into a stout long curved spine; the truncation rugose; wings hyaline, with a faint cloud crossing the second submarginal cell, and occupying also the base of the marginal cell; the legs with tints of blue on the tibiæ and tarsi, the coxæ and thorax beneath with large, not very close, deep punctures. Abdomen ovate, with a blue tinge on the disk; the first, third and following segments coarsely punctured; the second segment with finer scattered punctures.

Hab. Venezuela.

This species is most nearly allied to *A. thoracica*, but differs in wanting the prominent angles at the anterior margin of the face; the prothorax is of a different form and is differently sculptured, and the abdomen is coarsely punctured; in *A. thoracica* it is smooth and shining.

12. *AMPULEX HOSPES*.

B.M.

Female. Length 12 lines.—Brilliant purple, with shades of green in certain lights; the head with scattered punctures, which are closest and strongest towards the insertion of the antennæ; the clypeus with a highly elevated carina down the centre; an abbreviated impressed line above the stemmata. Thorax: the prothorax smooth and convex above, with a few delicate scattered punctures; the mesothorax, scutellum and post-scutellum smooth and shining, with a few widely dispersed punctures; the disk of the mesothorax with two deeply impressed longitudinal lines, extending from the anterior margin to the base of the scutellum; outside of each, close to the tegulæ, is a deeply impressed fovea; the wings fuscous; the femora red; the metathorax rounded at the posterior angles, not spined, the upper surface with two oblique broad longitudinal grooves, which are transversely striated; the sides and posterior margin of the upper surface smooth and shining; the truncation smooth and shining; the sides have a transversely striated groove at their upper margin, below which they are punctured. Abdomen very smooth and shining, much compressed at the sides; beneath suddenly produced at the base of the second segment.

Hab. Borneo (Sarawak). (Coll. A. R. Wallace, Esq.)

This species in some particulars differs from those of the rest of the genus: the antennæ are stouter and shorter, as are also the mandibles; the wings, in the three females received, have only two submarginal cells, but the obliteration of the first transverse cubital nervure is of frequent occurrence in the genus; the metathorax is without spines at the posterior lateral angles, and the abdomen is abruptly produced at the base of the second segment beneath:—these differences constitute a remarkable and very distinct species; they cannot be regarded as of higher value, as a good series of the different species of the genus exhibit many approaches to the remarkable peculiarities of the present species.

HYMENOPTERA.

Genus 16. RHINOPSIS.

Rhinopsis, *Westw. Arc. Ent.* ii. 68.

1. RHINOPSIS ABBOTTII. Pl. VII. fig. 3. B.M.

Rhinopsis Abbottii, *Westw. Arc. Ent.* ii. 68. t. 65. f. 5 ♀.

Hab. Georgia.

Genus 17. APHELOTOMA.

Aphelotoma, *Westw. Trans. Ent. Soc. Lond.* iii. 225 (1841).

1. APHELOTOMA TASMANICA. Pl. VII. fig. 4 ♂.

Aphelotoma tasmanica, *Westw. Trans. Ent. Soc. Lond.* iii. 226.
t. xii. f. 4 ♀; *Arc. Ent.* ii. 65. t. 65. f. 3 ♂.

Hab. Van Diemen's Land. (Coll. W. W. Saunders and J. O. Westwood, Esq.)

Genus 18. TRIROGMA.

Trirogma, *Westw. Trans. Ent. Soc. Lond.* iii. 223 (1841).

1. TRIROGMA CÆRULEA. B.M.

Trirogma cærulea, *Westw. Trans. Ent. Soc. Lond.* iii. 225. t. 12.
f. 3 ♂; *Arc. Ent.* ii. 66. t. 65. f. 4 ♀.

Hab. Northern India; Madras.

Fam. 4. LARRIDÆ.

Mandibles notched exteriorly near the base; the labrum concealed, with a single spine at the apex of the intermediate tibiæ; the abdomen ovoid-conical.

Larrida, *Leach. Edin. Encycl.* (1817).

Larradæ, *Leach, Sam. Comp.* (1819).

Larridæ, *Steph. Syst. Cat.* (1829).

Larrites, *Newm. Ent. Mag.* i. (1834).

Lyropa, pt., *Guér. Icon. Règ. Anim.* iii. (1834).

Genus 1. LARRADA.

Sphex, pt., *Rossi, Faun. Etrus.* ii.

Fabr. Ent. Syst. ii. 213 (1793).

Larra, pt., *Fabr. Ent. Syst.* ii. 221.

Pompilus, pt., *Fabr. Syst. Piez.* 194 (1804).

Liris, pt., *Illig. Ed. Faun. Etrus.* (1807).

Astata, pt., *Spin. Ins. Lig.* i. 18 (1808).

The genus *Larra* was established by Fabricius in his "Ento-

mologia Systematica," and contained three or four species agreeing with its type, *Larra vespiformis*, the *Stizus vespiformis* of Latreille, Dahlbom and St. Fargeau. In this Catalogue the name *Larra* is restored to those species for which Fabricius originally formed it. The genus *Larra* of Latreille contains two, or perhaps more, good generic types of form: for one, the generic appellation *Tachytes*, as proposed by Panzer, is adopted: for the second the name *Larrada* is proposed; it contains those species which have the marginal cell *truncated at the apex and appendiculated*, and three submarginal cells, the first as long as the two following, the second receiving both recurrent nervures near its centre, the third lunate; the metathorax *truncated posteriorly, elongate*, the sides being generally parallel, but sometimes a little wider at the base; the mandibles large, arcuate, with a dentation on their exterior towards the base; abdomen ovato-conical, acuminate at the apex. In the type, *L. anathema*, the mandibles are not toothed within, and such is the case with the majority of the species; but in many there is a stout tooth, which is notched at its base. Probably a thorough investigation of the mandibles of all the species would show the necessity for making a separate genus for the species with teeth within the mandibles; in the present work they are included with the rest.

Species of Europe.

Div. 1. *Abdomen red and black.*

1. LARRADA ANATHEMA.

B.M.

Sphex anathema, Rossi, *Faun. Etrus.* ii. 65. 822 ♀.

Larra ichneumoniformis, Fabr. *Ent. Syst.* ii. 221. 4 ♂; *Syst. Piez.* 220. 4.

Coqueb. Illustr. Icon. Ins. ii. t. 12. f. 10 ♀.

Panz. Faun. Germ. 76. 18 ♂; *Krit. Revis.* ii. 128.

Spin. Ins. Lig. i. 72. 1.

Latr. Nouv. Dict. 2nd ed. xvii. 324; *Gen. Crust. et Ins.* iv. 71.

Dumer. Dict. Sc. Nat. xxv. 285.

Guér. Dict. Class. ix. 224.

Loris anathema, Illig. *Ed. Faun. Etrus.* ii. 101. 822.

Pompilus teutonius, Fabr. *Syst. Piez.* 194. 34 ♀.

Larra anathema, Van d. Lind, *Obs.* ii. 18. 1.

Shuck. Foss. Hym. 87. 1.

Dahlb. Hym. Europ. i. 136. 68 & 472. 1.

Smith, Cat. Brit. Hym. 18. 1.

Tachytes anathema, St. Farg. *Hym.* iii. 254. 17.

Lucas, Explo. Sc. Algér. iii. 250.

Hab. Italy; France; Germany; Hungary; Greece; Algeria; Port Natal. (Britain?)

Div. 2. *Abdomen black.*

2. LARRADA NIGRA.

Tachytes nigra, *Van. d. Lind*, *Obs.* ii. 23. 6.

St. Farg. Hym. iii. 242. 3.

Lucas, Explo. Sc. Algér. iii. 248.

Hab. Italy; Algeria (Oran).

3. LARRADA NITIDA.

Astata nitida, *Spin. Ins. Lig.* i. 18.

Tachytes nitida, *Van. d. Lind*, *Obs.* ii. 24. 7.

Tachytes pompiliformis, *Dahlb. Hym. Europ.* i. 130. 66.

Hab. Italy; Germany; Sweden. (Coll. W. W. Saunders, Esq.)

4. LARRADA ATRATA.

B.M.

Tachytes atrata, *St. Farg. Hym.* iii. 245. 6.

Lucas, Explo. Sc. Algér. iii. 248.

Hab. Piedmont; Algeria.

*Species of Asia.*Div. 1. *Abdomen red, or red and black.*

5. LARRADA SIMILLIMA.

Female. Length 7-9 lines.—Head, thorax and legs black; the two former closely punctured and thinly covered with short cinereous pubescence; the metathorax elongate, abruptly truncate at the apex, the truncation punctate and having a longitudinal channel; the mandibles and scape obscurely rufo-piceous; the clypeus thinly clothed with aurichalceous pubescence; wings dark fuscous; the legs black, finely pubescent; the calcaria, spines and claws obscurely ferruginous, sometimes nearly black. Abdomen red, smooth and shining, the segments covered laterally with a dense sericeous pubescence; the two apical segments black; in some examples the apical margin of the fourth segment is also black, in other instances the entire segment; another variety has the basal and apical segments black.

Hab. India; Africa. (Coll. F. Smith.)

This species closely resembles *L. anathema*, from which it is distinguished by the colouring of the abdomen, by not having an impressed line on the vertex, or a longitudinal central carina, and by the truncation of the metathorax being punctured, not transversely finely strigose.

6. LARRADA AURULENTA. Pl. VII. fig. 5.

B.M.

Sphex aurulentus, *Fabr. Mant.* i. 274. 10.Sphex aurata, *Fabr. Ent. Syst.* ii. 213. 64.Pompilus auratus, *Fabr. Ent. Syst. Supp.* 250. 25.Liris aurata, *Fabr. Syst. Piez.* 228. 3.*Dahlb. Hym. Europ.* i. 135.Tachytes opulenta, *St. Farg. Hym.* iii. 246. 7.Lyrops auratus, *Guér. Icon. Règ. Anim.* iii. 440.

Hab. India; China; Java; Sumatra; Celebes; Philippine Islands; Africa (the Cape of Good Hope; the Gambia).

Specimens of this species received from the Cape and the Gambia agree with the Indian ones in sculpture, but differ considerably in colour; they have the antennæ ferruginous, with a few of the apical joints more or less fuscous; the wings are much darker, and the anterior legs only are ferruginous; the apical segment of the abdomen is more or less ferruginous;—but we can only regard this as a climatic variety.

7. LARRADA CONSPICUA.

Female. Length 7 lines.—Black: the anterior margin of the clypeus, the scape and mandibles, ferruginous, the latter black at their tips; the extreme apex of four or five of the basal joints of the flagellum ferruginous; the face covered with silvery pubescence, which has a faint golden tinge. The tegulæ, legs, apical and two basal segments of the abdomen, ferruginous; the wings yellowish hyaline, the apical margins with a dark fuscous border, the nervures pale ferruginous; the metathorax finely transversely striated: probably in examples in fine condition the thorax would have a covering of pale golden pubescence. The third, fourth and fifth segments of the abdomen are dark fusco-ferruginous, not black.

Hab. India. (Coll. W. W. Saunders, Esq.)

8. LARRADA ARGYREA.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Black: the face densely covered with silvery pubescence; the mandibles ferruginous, covered with silvery pubescence at the base; the scape of the antennæ rufo-testaceous in front. The metathorax widest at the base, finely shagreened above, the truncation smooth and shining, thinly covered, as well as the sides, with silvery pubescence; the wings hyaline, the nervures and tegulæ pale rufo-testaceous; the tibiæ and tarsi rufo-testaceous, the intermediate and posterior tibiæ with a fuscous stain beneath. Abdomen: the three

basal segments ferruginous, the third with a fuscous band a little beyond the middle; the margins of the following segments pale testaceous, the apical segment ferruginous.

Hab. Northern India.

Div. 2. *Abdomen black.*

9. LARRADA MAURA.

B.M.

Sphex maura, *Fabr. Ent. Syst.* ii. 212. 55.

Pompilus maura, *Fabr. Ent. Syst. Supp.* 247. 11.

Liris maura, *Fabr. Syst. Piez.* 230. 10.

Hab. Tranquebar.

Fabricius having placed the *Sphex maura* eventually in the genus *Liris*, which contains species all belonging either to *Tachytes* or *Larrada*, there can be little doubt of the *L. maura* of this Catalogue being identical with the Fabrician insect; it nearly resembles the *L. glabrata*, but has the metathorax closely and strongly punctured above and behind, the verge of the truncation rounded, not sharply truncate; the wings also are subhyaline; the basal margins of the segments of the abdomen finely punctured, smooth and shining, not pubescent.

10. LARRADA TRISTIS.

B.M.

Female. Length 4 lines.—Black: the face covered with silvery pubescence, the scape rufo-piceous in front. The mesothorax and scutellum very finely and closely punctured, subopaque; the metathorax transversely and somewhat coarsely rugose; the sides of the disk and the truncation very coarse, and covered with short silvery pubescence; the sides of the metathorax obliquely striated; wings yellow-hyaline, the nervures and tegulæ rufo-testaceous. The abdomen with a fine silky pile; the margins of the segments with bands of silvery pile, observable in different lights.

Hab. Borneo.

11. LARRADA SUBTESSELLATA.

B.M.

Female. Length 6-7 lines.—Black: the face covered with a fine sericeous silvery pile; the anterior margin of the clypeus smooth and shining; the mandibles rufo-piceous at their apex. Thorax smooth, not shining; in fine examples with a silky down on the lateral and posterior margins of the mesothorax; the wings subhyaline, the nervures fusco-ferruginous, the tegulæ rufo-piceous; the metathorax slightly narrowed towards the apex, above transversely strigose, not coarsely so; the thorax at

the sides and beneath, and also the legs, have a fine silky cinereous pile; the posterior femora bright ferruginous. Abdomen covered with a fine silky pile, that on the posterior margins of the segments silvery; in some lights, the abdomen has a tessellated appearance; the apical segment opaque, and having a few scattered rigid hairs.

Hab. India; Sumatra; Java.

This is quoted by Dahlbom as the *Liris maura* of Fabricius, but that author does not mention the silvery pile on the abdomen; we have therefore given the name *maura* to another species. Dahlbom also gives Australia as the locality: the only species from that country agreeing with the description of Fabricius is quite distinct from the present insect, and appears to be one of the varieties of the *femorata* of Saussure.

12. LARRADA LABORIOSA.

B.M.

Female. Length 5-6 lines.—Black: the face has a thin silvery pubescence; the mesothorax and scutellum shining, very delicately punctured; the metathorax very finely transversely rugose, the truncation more strongly so; the sides of the metathorax delicately obliquely strigose; the disk has an abbreviated longitudinal carina, and the truncation a deeply impressed line; wings smoky hyaline, the nervures black; the legs thinly covered with sericeous pile. Abdomen covered with a fine changeable pile; that on the apical margins of the segments bright and silvery, but only observable in certain lights.

Hab. Philippine Islands.

Closely resembling *L. vigilans*, but easily distinguished by the sculpture of the metathorax.

13. LARRADA EXILIPES.

B.M.

Male. Length $3\frac{1}{2}$ lines.—Black: covered with short changeable silvery pile, which is most dense on the sides and apex of the metathorax and on the apical margins of the segments of the abdomen; the face with a dense bright silvery pubescence. The metathorax irregularly transversely rugose, with some coarse grooves at the sides and on the truncation, which has in the middle a deeply impressed fossulet; the wings hyaline, with the apical margins slightly fuscous; the nervures and tegulae rufotestaceous; the posterior femora bright ferruginous; the legs slender and elongate.

Hab. Northern India.

This is probably the male of *L. subtessellata*.

14. *LARRADA GLABRATA*.

B.M.

Female. Length 7 lines.—Black: the head smooth and shining; the antennæ rufo-fuscous, the scape smooth, shining and rufo-piceous in front; the mandibles ferruginous. The mesothorax closely punctured, and having a sparing short fuscous pubescence; the metathorax elongate, the sides parallel, the apex abruptly truncate, above rugose, with a central longitudinal carina, which extends to the verge of the truncation; the latter has an impressed line in the centre, is shining and delicately punctured, with the lateral margins roughened; the wings fuscous, the tegulæ rufo-testaceous; the sides of the pectus and the femora ferruginous, the latter incrassate; the intermediate and posterior tibiæ and the tarsi thickly spined, the spines dark ferruginous. Abdomen elongate, smooth, shining and impunctate.

Hab. Celebes.

15. *LARRADA JACULATOR*.

B.M.

Female. Length 6 lines.—Black: the face and cheeks with a fine short silvery pubescence; that on the former has a faint golden tinge; the apex of the mandibles rufo-piceous. The mesothorax and scutellum smooth shining and delicately punctured; the sides of the former with a fine short pale yellow pubescence; the metathorax, legs and abdomen covered with a changeable silvery pile; the metathorax finely shagreened and having a central longitudinal carina, not extending to the verge of the truncation; the truncated portion very finely transversely strigose, and having a central longitudinal impressed line; wings flavohyaline, darkest towards the base of the anterior pair, their apical margins faintly clouded, the nervures pale ferruginous. Abdomen sericeous; in some lights the apical margins are seen to have bright silvery fasciæ; the apical segment covered with silvery pubescence and rounded at the apex.

Hab. North Bengal.

16. *LARRADA VIGILANS*.

B.M.

Female. Length 6 lines.—Black: the face thinly covered with silvery pubescence; the mandibles rufo-piceous; the mesothorax and scutellum smooth; the wings subhyaline, the nervures testaceous; the metathorax transversely rugose and having a longitudinal impressed line, which is continued to the verge of the truncation, the latter transversely rugose; the spines on the tibiæ and tarsi ferruginous; the apical margins of the segments of the abdomen with fasciæ of bright silvery pile, only observable

in certain lights; the apical segment rugose, the extreme apex ferruginous.

Hab. China.

Species of Africa.

Div. 1. *Abdomen red, or red and black.*

17. LARRADA HÆMORRHOIDALIS.

B.M.

Pompilus hæmorrhoidalis, *Fabr. Syst. Piez.* 198. 55.

Lyrops Savignyi, *Spin. Ann. Soc. Ent. Fr.* vii. 476. 26 (1838).

Liris orichalcea, *Dahlb. Hym. Europ.* i. 135.

Liris Savignyi, *Dahlb. Hym. Europ.* i. 471. 2.

Tachytes illudens, *St. Farg. Hym.* iii. 249. 12.

Hab. Africa (Egypt; Sierra Leone; Gambia); India (Punjaub, &c.).

18. LARRADA ABDOMINALIS.

Larra abdominalis, *Guér. Voy. Abyss. Lefeb.* vi. 358. t. 8. f. 7.

Hab. Abyssinia.

19. LARRADA RUBELLA.

Female. Length 5 lines.—Head, thorax and legs black; the face covered with bright silvery pubescence; the base of the mandibles and the cheeks thinly covered with silvery pubescence; the palpi, mandibles and scape in front obscurely ferruginous. The mesothorax and scutellum closely punctured, the metathorax coarsely rugose; the wings subhyaline, their apical margins with a broad fuscous cloud, the nervures and tegulae dark ferruginous. Abdomen dark red, the basal segment more or less black at the sides; the apical margins of the segments with fasciæ of silvery pubescence.

Hab. Fernando Po. (Coll. W. W. Saunders, Esq.)

20. LARRADA RUFIVENTRIS.

Larrada rufiventris, *Spin. Ann. Soc. Ent. Fr.* vii. 479. 15 ♀ (1838).

Hab. Egypt.

Div. 2. *Abdomen black.*

21. LARRADA NIGRITA.

B.M.

Tachytes nigrita, *St. Farg. Hym.* iii. 241. 2.

Lucas, Explo. Sc. Algér. iii. 247. t. 13. f. 10.

Hab. Algeria; Madeira.

The example in the Museum Collection agrees with the description of St. Fargeau in every respect except a slight difference in the sculpture of the metathorax, which is finely transverse-striate and coarsely ridged at the sides, the truncation transversely grooved.

22. LARRADA TARSATA.

Lyrops tarsalis, *Spin. Ann. Soc. Ent. Fr.* vii. 478. 27 ♂ (1838).

Hab. Egypt.

23. LARRADA GENICULATA.

Lyrops geniculata, *Spin. Ann. Soc. Ent. Fr.* vii. 480. 29 ♀ (1838).

Hab. Egypt.

24. LARRADA ERYTHROPUS.

Lyrops erythropus, *Spin. Ann. Soc. Ent. Fr.* vii. 479. 28 ♀ (1838).

Hab. Egypt.

This may possibly be identical with the *L. pallipes*; but Spinola does not mention the sculpture of the metathorax, which in this genus appears to offer the best specific distinctions.

25. LARRADA MEMNONIA.

B.M.

Female. Length 7 lines.—Black: the face covered with silvery pubescence, the mandibles obscurely rufo-piceous, the apical joints of the palpi pale testaceous. The thorax covered with a fine silvery pile, as well as the legs; the tarsi and apex of the tibiae ferruginous; the wings fulvo-hyaline, the nervures and tegulae behind rufo-testaceous; the scutellum smooth and shining; the metathorax finely transversely striated, and having a central abbreviated carina not extending to the verge of the truncation, the striae coarser at the sides, the truncation also coarsely striated. The apical margins of the segments of the abdomen with fasciae of changeable silvery pile.

Hab. Egypt; Senegal.

26. LARRADA OBLIQUA.

B.M.

Female. Length 4 lines.—Black: the face thinly covered with silvery pubescence. Thorax: the mesothorax very closely and finely punctured, as is also the scutellum; the metathorax with a central impressed line which extends to the verge of the truncation; on each side the disk is obliquely striated; the truncation transversely striated, and having a central carina which

terminates in a deep fossulet above; wings hyaline, faintly clouded at their apical margins, the nervures testaceous; the two apical joints of the tarsi ferruginous. Abdomen thinly covered with a fine thin sericeous pubescence, the three basal segments slightly depressed.

Hab. Cape of Good Hope.

27. *LARRADA ATERRIMA*.

Female. Length $4\frac{1}{2}$ lines.—Deep opaque black: the face with bright silvery pubescence; the mesothorax with a central longitudinal depression in front, on each side of which is an elongated slightly impressed line, and also a short scratch opposite the front of the tegulæ, the latter rufo-piceous behind; the wings smoky, the nervures black; the metathorax very delicately transversely striated, the sides obliquely so, and the truncation with coarse transverse ridges and a central longitudinal deeply impressed line. Abdomen: the basal segment and the apical margins of the segments with bright silvery fasciæ, observable in certain lights.

Hab. Cape of Good Hope. (Coll. F. Smith.)

28. *LARRADA PALLIPES*.

B.M.

Male. Length 4 lines.—Black, and covered with a grey silky pile; the face densely covered with bright silvery pubescence; the palpi, mandibles and scape ferruginous. The mesothorax and scutellum closely punctured; the metathorax transversely rugose; a central longitudinal carina extends to the verge of the truncation; the sides of the metathorax obliquely strigose; the wings subhyaline and iridescent, the nervures and tegulæ pale rufo-testaceous; the legs pale ferruginous, the coxæ and trochanters fuscous; the apical margins of the segments of the abdomen slightly depressed.

Hab. Africa.

This may possibly be the male of *L. ferrugineipes*, but the metathorax is longer and much more coarsely sculptured.

29. *LARRADA PUNCTATA*.

Female. Length $3\frac{1}{2}$ lines.—Black: the head, the mesothorax above and beneath, the scutellum and metathorax, closely and finely punctured; the sides of the latter obliquely striated, the truncation transversely so; the face with fine sericeous pubescence; the mandibles ferruginous; wings fuscous and iridescent;

the apical joints of the tarsi ferruginous. The apical margins of the segments of the abdomen obscurely rufo-piceous.

Hab. Cape of Good Hope. (Coll. F. Smith.)

30. LARRADA SOLSTITIALIS.

B.M.

Female. Length 8-9 lines.—Black, and covered with a fine silky silvery pile; the face, sides of the scape, and base of the mandibles covered with silvery pubescence which has a faint golden tinge; the thorax above has a similar clothing to the face, most dense on the lateral and posterior margins of the mesothorax and on the sides of the metathorax, the disk of the latter transversely striated, its sides and also the truncation coarsely so; the truncation has a central longitudinal impressed line deepest towards the verge of the truncation; the wings flavo-hyaline, their apical margins with a fuscous cloud, the nervures and tegulæ rufo-testaceous; the posterior femora ferruginous; the spines which arm the tibiæ and tarsi ferruginous. The abdomen with changeable silvery fasciæ on the apical margins of the segments.

Hab. Port Natal.

This species most closely resembles the *L. subtessellata*, but its metathorax is differently sculptured; the nervures of the wings are also of a different colour.

31. LARRADA CILIATA.

B.M.

Female. Length 5 lines.—Black: the face covered with silvery pubescence; the tips of the mandibles ferruginous. Thorax: the mesothorax and scutellum smooth, shining, and very delicately punctured; the metathorax transversely striated, the sides of the disk and the truncation coarsely so; the sides of the metathorax obliquely striated; the wings fuscous, their apical margins with a darker cloud; the nervures and tegulæ testaceous; the tarsi ferruginous, the anterior pair with long dark-coloured flattened cilia, the spines which arm the intermediate and posterior pairs long and black. Abdomen without fasciæ: probably in fine condition it would have silvery bands.

Hab. South Africa.

32. LARRADA FERRUGINEIPES.

B.M.

Tachytes ferrugineipes, *St. Farg. Hym.* iii. 248. 11.

Hab. Senegal; Congo.

The example believed to be the species described by St. Far-

geau has the metathorax transversely rugose. St. Fargeau does not mention the sculpture; his description would suit three or four species, and is very incomplete.

33. *LARRADA IRRODATA*.

Female. Length 7 lines.—Black: the face densely clothed with golden pubescence; the cheeks and vertex have a thin golden pile. The mesothorax thinly covered with rich golden pile on the sides of the thorax; beneath, and on the metathorax, it is silvery; the disk of the metathorax transversely rugose; wings flavo-hyaline, their apical margins faintly clouded; the spines which arm the tibiae and tarsi ferruginous. Abdomen covered with changeable silky pile; the margins of the segments having fasciae of silvery pile, observable in different lights.

Hab. Senegal. (Coll. F. Smith.)

34. *LARRADA AGILIS*.

Female. Length 5 lines.—Black: the face thinly covered with silvery pubescence; the scape, mandibles and anterior margin of the clypeus bright ferruginous; the vertex smooth, without the usual tubercles or ridges which replace the posterior ocelli. Thorax with a scattered glittering silvery pubescence; the metathorax longitudinally rugose in the middle, the sides of the disk transversely striated, as well as the truncation, which is coarsely grooved, and has a deeply impressed line in the centre; the sides of the metathorax obliquely striated; the wings hyaline, their apical margins faintly clouded, the nervures and tegulae behind, rufo-testaceous; the tarsi bright ferruginous, their basal joint black; the tips of the posterior femora with a patch of ferruginous pubescence within; the posterior tibiae not grooved longitudinally, as in the majority of the species. Abdomen attenuated at the base and apex, narrow and elongate; the posterior margins of the segments covered with silvery pile, observable in different lights.

Hab. The Gambia. (Coll. F. Smith.)

35. *LARRADA CRÆSUS*.

Female. Length 7 lines.—Black: the head, thorax and abdomen covered with golden pubescence; on the vertex it is sparing, and the apical margins of the segments of the abdomen have bright golden fasciae, which are more or less brilliant in different lights; the mandibles and scape in front dark rufo-piceous; the sides of the thorax, the coxae and femora, covered with cinereous pile, that on the tibiae and tarsi golden; the tarsi, the spines

which arm the tibiæ, and the apical segment of the abdomen, ferruginous; the wings yellow, with a broad dark fuscous border.

Hab. The Gambia. (Coll. F. Smith.)

36. LARRADA SERICEA.

Female. Length 6 lines.—Black: the face covered with golden pubescence; on the cheeks and base of the mandibles it is silvery; the mandibles and scape ferruginous, the former black at their tips. The thorax covered with cinereous pubescence; on the mesothorax it is very short and sparing, but dense and longer on the metathorax; a spot of golden pubescence in front of the tegulæ; the legs ferruginous, with the coxæ and trochanters black; the wings hyaline, their nervures and tegulæ ferruginous. Abdomen covered with a grey sericeous pile, the apical margins of the segments with bands of bright silvery pile, very brilliant in some lights, the apical segment smooth and shining.

Hab. The Gambia. (Coll. F. Smith.)

Species of Australia.

Abdomen black.

37. LARRADA AUSTRALIS.

B.M.

Tachytes Australis, *Sauss. Mém. Soc. Phys. Genève*, xiv. fasc. 1. 19. 8. t. f. 7 ♀.

Hab. New Holland.

38. LARRADA FEMORATA.

B.M.

Tachytes femoratus, *Sauss. Mém. Soc. Phys. Genève*, xiv. fasc. 1. 20. 9. t. f. 6 ♂.

Female. Length 6½ lines.—Black: the head smooth and shining, the face has a little silvery pubescence, the mandibles ferruginous. Thorax opaque; the mesothorax and scutellum very closely punctured; the metathorax very finely shagreened, the sides parallel; the legs ferruginous, the coxæ, trochanters and anterior legs black; the anterior tarsi, apex of the tibiæ and knees rufo-piceous; the wings smoky and iridescent, the tegulæ testaceous. Abdomen smooth, shining and very delicately punctured, the margins of the segments with a silvery border and narrowly rufo-piceous, particularly the three apical ones; the apical segment triangular, margined at the sides, and with a few large punctures.

Hab. New Holland.

*Species of South America.*Div. 1. *Abdomen red, or red and black.*

39. LARRADA PAGANA.

Tachytes pagana, *Dahlb. Hym. Europ.* i. 132.

Hab. Island of St. Crucis.

40. LARRADA FULVIVENTRIS.

Lyrops fulviventris, *Guér. Icon. Règ. Anim.* iii. 440.

Hab. Cuba.

41. LARRADA RUBRICATA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Head and thorax black; the face densely covered with silvery pubescence; the mandibles ferruginous. Thorax opaque, the metathorax delicately shagreened, the lateral margins raised and having a little silvery pubescence; the apex abruptly truncate, the truncation covered with silvery pubescence; the legs have a fine silvery silky pile; the claws ferruginous; the wings hyaline, their apical margins slightly fuscous, the nervures and the tegulæ ferruginous. Abdomen ferruginous, the apical margins of the segments with fasciæ of silvery pile, observable only when viewed in some positions; the apical segment shining, and with a few scattered punctures.

Hab. Brazil (Para). (Coll. H. W. Bates.)

Div. 2. *Abdomen black.*

42. LARRADA CAMPESTRIS.

B.M.

Female. Length 5–6 lines.—Black: the face with bright pale golden pubescence; the head behind, the eyes and the mandibles at their base, with similar pubescence, in some lights having a bright silvery lustre, in others a golden brilliancy; the meso- and metathorax have a similar pubescence; the wings yellow at their base, slightly fuscous at their apex; the metathorax very finely granulated, the truncation abrupt, its margin slightly raised; the claws ferruginous, their tips black; the basal segment of the abdomen and the apical margins of the following segments with bright changeable silvery pubescence, very brilliant in some lights, but scarcely discernible in others.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

43. LARRADA CORONALIS.

B.M.

Female. Length 6-7½ lines.—Black: the face shining; the clypeus covered with thin silvery pile; a smooth shining carina at the inner orbit of the eyes extending from opposite the insertion of the antennæ to the anterior stemmæ; the vertex densely covered with golden pubescence, a rounded spot of the same on the mesothorax; the metathorax elongate, smooth and opaque above, the apex truncate, the sides and upper margin transversely strigose, with a longitudinal channel deeply impressed; the angles of the truncation with a macula of bright silvery pubescence; wings subhyaline, with a transverse fuscous cloud towards their apex; the nervures black; the marginal cell truncate at the apex; the legs have a fine cinereous pile, at the apex of the posterior tibiæ it is golden. Abdomen covered with a changeable pile, which has shades of purple, silver, or violet in different lights; on the lateral apical margins of the three basal segments a large patch of bright silvery pubescence; the segments also have lateral spots of silvery pile beneath; the apical segment very smooth and shining above, with a longitudinal carina on each side.

Hab. Brazil (the Amazons; Villa Nova). (Coll. H. W. Bates.)

44. LARRADA DECORATA.

B.M.

Female. Length 7 lines.—Black: covered with a fine changeable silky pile, which in different lights is bright and silvery in parts; it is very brilliant on the apical margins of the segments of the abdomen, the truncation of the metathorax, and on the pectus, coxæ and femora beneath; the face and head behind the eyes covered with bright pale golden pubescence; the mesothorax has a deep depression in front, which is covered with golden pubescence, as are also the lateral and posterior margins; the metathorax has also a similar pubescence; the wings yellow, their apical margins with a broad fuscous cloud, the nervures pale ferruginous.

Hab. Brazil (Para). (Coll. H. W. Bates.)

45. LARRADA ANTICA.

Male. Length 4½ lines.—Black: the face covered with golden pubescence; the scape in front and the tips of the mandibles ferruginous. Thorax: the metathorax densely covered with golden pubescence; the wings subhyaline, a dark fuscous stripe runs from the base to the apex of the anterior pair; the posterior pair are faintly clouded at their apex; the tips of the femora, the tibiæ and tarsi rufo-testaceous. Abdomen: the apical margins

of the segments narrowly rufo-testaceous, the base with a fine cinereous pile.

Hab. Brazil (Amazons). (Coll. W. W. Saunders.)

46. LARRADA FULIGINOSA.

Larra fuliginosa, *Dahlb. Hym. Europ.* i. 138 & 472. 3.

Hab. Cuba.

47. LARRADA FULVIPES.

B.M.

Female. Length 7-8 lines.—Black: the head wider than the thorax; the face covered with silvery pubescence; the anterior margin of the clypeus rounded; the palpi and mandibles ferruginous. The thorax covered with a fine silky silvery pubescence, most dense at the sides of the mesothorax, on the post-scutellum and at the sides of the metathorax, the latter rounded behind; the wings hyaline, faintly tinted with yellow, the nervures and tegulae of a fulvous-red; the legs of the same colour; the coxæ black; the marginal cell narrowed and rounded at the apex; the first transverse cubital nervure nearly straight. Abdomen: a little short silky pubescence at the base; the apical margins of the three basal segments with bands of silvery pubescence; the apical segment margined at the sides; the apex rounded, and with an obscure fusco-ferruginous pubescence.

Hab. Brazil; Jamaica; St. Domingo.

This species resembles *Tachytes Etrusca*, but the second submarginal cell is much wider towards the marginal cell; the head is wider than the thorax, and the abdomen has only three silvery bands; and the femora as well as the tibiae and tarsi are red.

48. LARRADA IGNIPENNIS.

B.M.

Female. Length 7 lines.—Black: the face covered with silvery pubescence, as well as the cheeks and base of the mandibles. Thorax: the legs, thorax beneath, the breast and first segment of the abdomen beneath, covered with fine silky pile, very brilliant in certain lights; the meso- and metathorax subopaque, the latter having a shallow indistinct longitudinal furrow; the lateral margins slightly raised, and with a few transverse raised carinae; the truncation smooth in the middle, and having a few striae at its upper margin, which is slightly raised; in the middle is a deep longitudinal furrow; the wings bright ferruginous, with a broad fuscous border at their apical margins. Abdomen with a fine silky pile, the apical margins of the segments with bright silvery fasciae, varying in brilliancy in different lights;

the apical segment covered with silvery pubescence, with a smooth shining naked space at the base.

The male agrees with the female in general colouring, but is smaller.

Hab. St. Domingo.

49. *LARRADA LATERISETOSA.*

B.M.

Larra laterisetosa, *Spin. Mem. Accad. Torino*, xiii. 58. 41 (1853).

Hab. Brazil (Para).

50. *LARRADA LUCTUOSA.*

B.M.

Female. Length 7-8 lines.—Black: the face, scape in front, cheeks and mandibles, covered with fine silvery silky pubescence; the anterior margin of the clypeus emarginate in the middle. Thorax: the mesothorax and scutellum closely and finely punctured; the metathorax delicately transversely striated, the sides obliquely so; the truncation coarsely rugose, the striation running in a circular direction; the margin of the truncation slightly rounded, not sharp or abrupt; the wings smoky-hyaline, the nervures black, the tegulæ shining; the legs have a fine cinereous pile; the tibiæ and tarsi strongly spinose. Abdomen sericeous, the margins of the segments with bright silvery fasciæ.

Hab. St. Domingo; Brazil.

51. *LARRADA NITIDIUSCULA.*

B.M.

Female. Length 3 lines.—Black: the face covered with silvery pubescence, having a smooth space in the middle, extending from the anterior ocellus to the insertion of the antennæ; the mandibles pale rufo-testaceous, their apex rufo-piceous. The mesothorax and scutellum shining; the metathorax finely roughened, but shining; a faintly impressed longitudinal line in the middle, terminating in a deep fovea at the verge of the truncation; the latter shining, with a triangular fovea close to the upper margin in the middle; the sides of the metathorax with a little silvery pubescence; the thorax shining beneath; the tibiæ and tarsi pale rufo-testaceous; wings hyaline and iridescent, the nervures, extreme base of the wings, and the tegulæ, pale testaceous. Abdomen smooth and shining, with a fine silky pile, the apical margins of the segments narrowly pale testaceous.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

52. *LARRADA QUADRIFASCIATA.*

B.M.

Female. Length 4 lines.—Black: the face densely covered

with silvery pubescence. Thorax: the mesothorax very closely and finely punctured, the lateral margins covered with fine sericeous pile; the metathorax finely shagreened, the apex abruptly truncate, the truncation covered with silvery pubescence; the wings hyaline, with a faint cloud on their apical margins; the nervures testaceous, as well as the tegulæ behind; the thorax beneath and the legs have a fine silky pile. The apical margins of the four basal segments with fasciæ of silvery pile, observable in different lights; the apical segment covered with silvery pubescence, the tip ferruginous.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

53. LARRADA SUBPETIOLATA.

B.M.

Female. Length 3 lines.—Black: the face silvery; the mandibles pale ferruginous, black at their base. The thorax covered with a fine thin cinereous pile, subopaque; the metathorax delicately shagreened, the truncation abrupt and covered with bright silvery pubescence; the wings fusco-hyaline, their apical margins darkest; the nervures and tegulæ rufo-testaceous; the spines which arm the tibiæ and tarsi, not the calcaria, short, sparing, and pale testaceous. The abdomen subpetiolate, the apical margins of the segments with fasciæ of silvery pile, observable in different lights.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

54. LARRADA TRIFASCIATA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the face, cheeks, and base of the mandibles covered with fine silvery sericeous pile. The mesothorax very delicately punctured, the punctures confluent; the metathorax opaque, the sides and apex with a fine cinereous pile; the truncation abrupt, with the margin at its verge slightly raised; the sides of the truncation, and also of the disk, transversely striated; the wings subhyaline, their apical margins with a fuscous border; the nervures black. The thorax beneath and the legs covered with a fine changeable cinereous pile. Abdomen sericeous, with fasciæ of silvery pile on the apical margins of the three basal segments; the apical segment covered with silvery pubescence.

Hab. St. Domingo.

55. LARRADA TRUNCATA.

Female. Length 5 lines.—Black: the face, mandibles, and head behind the eyes covered with golden pubescence; the anterior margin of the clypeus truncated, the angles of the truncation

acute. Thorax : above clothed with golden pubescence, which is most sparing in the middle ; on the sides, beneath, and on the legs, is a fine silky silvery pile ; wings yellow-hyaline, with a broad fuscous apical margin ; the nervures yellow towards the base of the wings, and fuscous towards their apex. Abdomen : the apical margins of the segments with broad pale golden bands, the apical segment obtuse and covered with pale pubescence.

Hab. Brazil. (Coll. F. Smith.)

Species of North America.

Div. 1. *Abdomen red and black.*

56. LARRADA ANALIS.

B.M.

Larra analis, *Fabr. Syst. Piez.* 220. 8.

Hab. Carolina ; United States (Delaware).

57. LARRADA LÆVIFRONS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Head and thorax black ; the face thinly covered with silvery pubescence ; the vertex with merely a slight elevation above the anterior ocellus, with two smooth spaces behind, between them a smooth shallow channel which passes a short way upwards towards the vertex terminating in a smooth fovea. Thorax opaque ; the metathorax finely shagreened, and having at the sides a little cinereous pubescence ; wings hyaline, the nervures testaceous ; the apical joints of the tarsi rufo-testaceous. Abdomen : the three basal segments red, the apical ones black ; thinly covered with cinereous pile, the apical segment very smooth and shining.

Hab. East Florida (St. John's Bluff).

58. LARRADA TERMINATA.

B.M.

Male. Length 3 lines.—Black ; the head closely and rather strongly punctured ; an impressed line runs backwards from the tubercles, which replace the two posterior ocelli, to the margin of the vertex ; the face covered with silvery pubescence. The mesothorax shining and punctured ; the metathorax shagreened ; the thorax above with a scattered short cinereous pubescence ; the wings hyaline and iridescent, the nervures testaceous ; the apical joints of the tarsi rufo-testaceous. Abdomen shining, delicately punctured ; the apical margins of the segments slightly depressed and narrowly rufo-piceous ; the two apical segments

of the abdomen ferruginous; the abdomen above is scattered over with short glittering hairs.

Hab. North America (Trenton Falls). (Coll. W. W. Saunders, Esq.)

Div. 2. *Abdomen black.*

59. LARRADA ARGENTATA.

B.M.

Larra argentata, *Pal. de Beauv. Ins. Afric. et Amér.* 119. t. 3. f. 9.
Say, Bost. Journ. i. 370.

Hab. United States.

60. LARRADA DISTINCTA.

B.M.

Female. Length 5 lines.—Black: the scape at its apex beneath and the tips of the mandibles ferruginous; the clypeus with a few large punctures. The mesothorax and scutellum very finely and closely punctured; the metathorax with a central longitudinal impressed line, on each side being obliquely striated, the striation slightly curved; the margin of the truncation rugose, beneath which it is transversely striated; wings hyaline, the nervures and tegulæ rufo-testaceous; the two apical joints of the tarsi rufo-testaceous. Abdomen smooth and shining, the apical segment with scattered punctures.

Hab. New York.

Very like *arcuata*, but at once distinguished by the sculpture of the metathorax.

61. LARRADA PENNSYLVANICA.

B.M.

Larra Pennsylvanica, *Pal. de Beauv. Ins. Afric. et Amér.* 118. t. 3. f. 8.

Hab. St. John's Bluff; East Florida; North America.

62. LARRADA CANESCENS.

B.M.

Female. Length 5 lines.—Black: thinly covered with short cinereous pubescence, the abdomen being covered above and beneath; the head, mesothorax and scutellum strongly punctured; the metathorax shagreened; the flagellum much thickened towards the base, which is again more slender; the wings brown, the posterior pair clearer at the base; the anterior tibiae and tarsi obscure ferruginous. Abdomen: on the apical margins of the segments the pubescence is bright and silvery, observable in different lights.

Hab. Georgia.

63. LARRADA TENUICORNIS.

B.M.

Female. Length 6 lines.—Jet-black and shining, not pubescent; the head and mesothorax very closely punctured; the anterior margin of the clypeus highly polished, and with a few large punctures; the antennæ slender and elongate, longer than the head and thorax; the metathorax transversely strigose, and having a central longitudinal slightly impressed line, which expands into a broad shallow fovea at the verge of the truncation; the latter oblique, with a large fovea above, from which emanates a narrower impressed line, which runs down to the base; wings dark brown; the apical joints of the tarsi obscure rufo-testaceous. Abdomen elongate, very acute at the apex.

Hab. California.

64. LARRADA ARCUATA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the face with silvery pubescence; the mesothorax subopaque; the scutellum shining and finely punctured; the metathorax with an arcuate striation, the striation curving forwards, interrupted in the middle by a longitudinal carina which runs to the verge of the truncation; the latter has a small triangular shape crossed by coarse arcuate striae, in the middle of which is a deep fovea; from the fovea a carina runs downwards to the base; on each side of the carina the truncation is smooth, and covered with silvery-white pubescence; wings subhyaline, with a faint cloud at their apical margins; the two apical joints of the tarsi obscure rufo-testaceous. Abdomen smooth and shining, with the apical segment rugose.

Hab. Canada.

Genus 2. LARRAXENA.

Larraxena, *Smith, Ann. & Mag. Nat. Hist. ser. 2. vii. 30* (1851).

1. LARRAXENA PRINCEPS.

B.M.

Larraxena princeps, *Smith, Ann. & Mag. Nat. Hist. 2nd ser. vii. 30*.

Hab. Brazil.

Genus 3. MORPHOTA.

Head compressed, a little wider than the thorax; antennæ filiform, inserted at the base of the clypeus; the vertex slightly convex, the ocelli placed in a triangle forward on the vertex; eyes large, oval, lateral, their inner orbit straight; the mandibles

arcuate, with a dentation on the exterior towards the base. Thorax oval, the collar transverse; the metathorax of about equal length to the mesothorax, truncated posteriorly; the superior wings with one marginal cell appendiculated and truncated at its apex; three submarginal cells, the first longer than the two following; the second triangular, with the angles truncated; the third oblique, oblong, of equal width; the legs moderately long, spinose. Abdomen ovato-conical, acute at the apex.

This genus closely resembles *Larrada*, but differs principally in the neururation of the wings and in having three distinct ocelli.

1. MORPHOTA FASCIATA.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Head and thorax black; the clypeus covered with silvery pubescence; the vertex smooth; an impressed line runs from the anterior ocellus to the insertion of the antennæ; the mandibles and scape in front rufo-piceous; the thorax and legs with a fine thin glittering silky pile; the anterior wings have a transverse fascia crossing the second and third submarginal cells, the extreme apex slightly clouded; metathorax opaque, very finely shagreened; the scutellum smooth and shining. Abdomen: the two basal segments and the base of the third segment ferruginous, the apical segments black; the apical margins of the second and third segments covered with silvery pile.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

2. MORPHOTA CONCINNA.

B.M.

Female. Length $3-3\frac{1}{2}$ lines.—Head and thorax black and shining; the head covered with a delicate silky pile, the clypeus with bright silvery pubescence; the mandibles ferruginous. The metathorax flattened above and longitudinally striated, the striæ slightly waved; the truncation highly polished, with a deep fossulet in the middle above, the sides with a few transverse coarse striæ; wings hyaline, beautifully iridescent, with a faint transverse fascia crossing the second and third submarginal cells, the nervures rufo-testaceous. Abdomen: the three basal segments ferruginous, the three apical black; the apical margins of the second and third segments covered with silvery pile.

Hab. Brazil (Tapajos).

3. MORPHOTA HARPACTOIDES.

B.M.

Female. Length 5 lines.—Black: the face and cheeks densely covered with silvery pubescence, the head having a fine short downy pile. Thorax and legs covered with silvery pile, very

bright in different lights; the metathorax finely rugose, and with a central longitudinal carina which extends to the verge of the truncation; wings hyaline, faintly clouded at their apical margins, the nervures pale testaceous; the intermediate and posterior tibiae with a double row of pale testaceous spines externally. Abdomen with the two basal segments ferruginous, covered with a fine downy pile; the apical margins of the second and third segments with fasciae of silvery pile, only observable in certain lights.

Hab. Brazil.

Genus 4. TACHYTES.

Apis, pt., *Rossi, Faun. Etrus. Mant.* i. 143 (1792-4).

Sphex, pt., *Fabr. Ent. Syst.* ii. 215 (1793).

Lyrope, *Illig. Ed. Faun. Etrus.* (1807).

Tachytes, *Panz. Krit. Revis.* (1806).

Larra, *Panz. Faun. Germ.* 89. 13.

The genus *Tachytes*, as treated in this Catalogue, contains those species only which possess the following characters,—the type being the *Tachytes pompiliformis* of Panzer.

Head transverse, wider than the thorax; the mandibles large, arcuate and acuminate, within bidentate, deeply emarginate on the exterior towards the base, or notched, forming a dentate process. Thorax ovate; the prothorax almost concealed beneath the convex gibbosity of the mesothorax; the metathorax short, rounded at the sides, gradually declined above to the apex, not sharply truncated, as broad as long; the superior wings with one marginal cell, more or less rounded at the apex, not truncated; three submarginal cells, the second receiving both recurrent nervures. Abdomen short, ovate-lanceolate, subsessile, not longer than the thorax, usually subdepressed above; the apical segment with the disk flat, the margins reflexed.

Species of Europe.

Sect. 1. *Abdomen red and black.*

1. TACHYTES POMPILIFORMIS.

B.M.

Larra pompiliformis, *Panz. Faun. Germ.* 89. 13; *Krit. Revis.* ii. 129.

Spin. Ins. Lig. ii. 173. 18.

Larra dimidiata, *Panz. Faun. Germ.* 106. 13 ♀.

Tachytes pompiliformis, *Van d. Lind*, ii. 21. 5 ♂ ♀.

Shuck. Foss. Hym. 89. 1.

St. Farg. Hym. iii. 252. 15.

Tachytes pectinipes, *Dahlb. Hym. Europ.* 127. 63 (nec *Sphex pectinipes*, Linn.).

Wesm. Hym. Foss. Belg. 72. 3.

Hab. Europe.

2. TACHYTES OBSOLETUS.

B.M.

Apis obsoleta, *Rossi, Faun. Etrus. Mant.* i. 143. 318.

Sphex tricolor, *Fabr. Ent. Syst.* ii. 215. 71.

Pompilus tricolor, *Fabr. Ent. Syst. Supp.* 251. 33.

Panz. Faun. Germ. 84. 19.

Larra tricolor, *Fabr. Syst. Piez.* 221. 14.

Spin. Ins. Lig. i. 73. 2.

Jurine, Hym. 145.

Coqueb. Illustr. ii. t. 12. f. 9.

Tachytes tricolor, *Panz. Krit. Revis.* ii. 129.

Lyrops tricolor, *Latr. Gen. Crust. et Ins.* iv. 71.

Tachytes obsoleta, *Van d. Lind, Obs.* ii. 20. 2.

Dahlb. Hym. Europ. i. 133. 67.

St. Farg. Hym. iii. 251. 14.

Lucas, Explo. Sc. Algér. iii. 249.

Hab. France; Germany; Albania; Spain.

3. TACHYTES PANZERI.

B.M.

Tachytes Panzeri, *Van d. Lind, Obs.* ii. 20. 4.

Dahlb. Hym. Europ. i. 125. 61.

Wesm. Hym. Foss. Belg. 71. 2.

Hab. France; Germany.

4. TACHYTES BRULLII.

Tachytes bicolor, *Brullé, Expéd. Sc. de Morée*, iii. 373 ♀.

Hab. The Morea.

5. TACHYTES? CRASSICORNIS.

Tiphia crassicornis, *Fabr. Mant.* i. 178. 2.

Larra crassicornis, *Fabr. Ent. Syst.* ii. 221. 5; *Syst. Piez.* 220. 5.

Dumeril, Dict. Sc. Nat. xxv. 285.

Van d. Lind, Obs. ii. 19. 2.

Hab. Spain.

6. TACHYTES NIGRIPENNIS.

Tachytes nigripennis, *Spin. Ins. Lig.* ii. 260.

Van d. Lind, Obs. ii. 20. 3.

Dahlb. Hym. Europ. i. 126. 62.

Hab. Italy; Germany.

Sect. 2. *Abdomen black.*

7. TACHYTES ETRUSCA.

B.M.

Andrena Etrusca, Rossi, *Faun. Etrus.* ii. 98. 900. t. 6. f. 11.*Lyrops Etrusca*, Illig. *Ed. Faun. Etrus.* ii. 161. 900.*Latr. Gen. Crust. et Ins.* iv. 71.*Tachytes Etrusca*, Van d. Lind, *Obs.* ii. 19. 1.*St. Farg. Hym.* iii. 244. 5.*Dahlb. Hym. Europ.* i. 134.*Lucas, Explo. Sc. Algér.* iii. 248.*Hab.* Italy; Albania; Algeria.

8. TACHYTES UNICOLOR.

B.M.

Lara unicolor, Panz. *Faun. Germ.* 106. 16 ♀.*Dahlb. Exercit. Hym.* 55. 6.*Tachytes unicolor*, Shuck. *Foss. Hym.* 89. 1.*Dahlb. Disp. Méth. Sp. Hym.* 11. 44; *Hym. Europ.* i. 129.*Brullé, Hist. Nat. Il. Canar.* 91. 54.*St. Farg. Hym.* iii. 240. 1.*Lucas, Explo. Sc. Algér.* iii. 246.*Tachytes pompiliiformis*, Van d. Lind, *Obs.* ii. 21. 5. (var.)*Wesm. Hym. Foss. Belg.* 71. 1.*Lara Jurinii*, Drapiez, *Ann. Gén. Sc. Phys. Bruz.* i. 54. t. 4. f. 7 ♂?*Tachytes Jurinii*, Van d. Lind, *Obs.* ii. 24. 8?*Hab.* Britain; France; Italy; Germany; Scandinavia.

9. TACHYTES ARGENTATA.

B.M.

Tachytes argentata, Brullé, *Expéd. Sc. de Morée*, iii. 372. 822 ♂.*Hab.* The Morea; Albania.

This is probably the male of *T. Etrusca*: females received in company with *T. argentata*, undoubtedly *T. Etrusca*, have the apical segment covered with golden pubescence; *T. argentata* is described as having the apical segment clothed with silvery pubescence.

*Species of Asia.*Sect. 1. *Abdomen red and black.*

10. TACHYTES TARSATUS.

Female. Length 6 lines.—Head and thorax black; the face covered with pale golden pubescence; the mandibles and palpi ferruginous, tips of the former black; the thorax and legs covered with a silvery downy pubescence, most dense on the sides of the

mesothorax above, the sides of the metathorax, on the femora behind, and on the tibiæ outside; the tarsi ferruginous; the spines on the tibiæ and tarsi pale testaceous; wings hyaline, the nervures and tegulæ pale ferruginous. Abdomen ferruginous, the three apical segments black, covered with fine silvery pile; the apical margins of the segments with silvery fasciæ, those on the third, fourth and fifth broad, nearly covering the segment; the sides of the apical segment carinate, the segment clothed above with golden pubescence.

Hab. India. (Coll. F. Smith.)

11. *TACHYTES FERVIDUS.*

Female. Length $5\frac{1}{2}$ lines.—Head and thorax black, and covered with short golden pubescence; the antennæ, anterior margin of the clypeus, and the mandibles, ferruginous; the flagellum fuscous above, and the mandibles rufo-piceous at their apex. The wings hyaline, the nervures and tegulæ pale ferruginous; the legs ferruginous, the anterior and intermediate coxæ more or less fuscous. Abdomen ferruginous, thinly covered with changeable short golden down, the margins of the segments with golden bands, which in different lights have a tessellated appearance; in some individuals the fourth segment is slightly fuscous.

Hab. India. (Coll. F. Smith.)

Sect. 2. *Abdomen black.*

12. *TACHYTES NITIDULUS.*

B.M.

Crabro nitidulus, *Fabr. Ent. Syst.* ii. 294. 6; *Syst. Piez.* 309. 7.

Hab. India (Madras; Punjab); Sumatra; Celebes.

The male of this species is covered with silvery pubescence, the fasciæ on the abdomen being very bright and widened laterally; the anterior tarsi rufo-testaceous.

13. *TACHYTES MONETARIUS.*

B.M.

Female. Length 6–8 lines.—Black: the face, outer orbit of the eyes, and base of the mandibles covered with bright silvery pubescence; the vertex and the thorax covered with a thin short cinereous pubescence; the legs have a similar clothing; the tibiæ outside have a bright silvery pubescence; the calcaria, spines and claws ferruginous; wings subhyaline, the anterior pair fuscous towards their base, darkest at their anterior margins, the apical margins of the wings with a narrow fuscous cloud. Abdomen densely clothed with short rich golden pubescence, which in

different lights has a beautiful tessellated appearance; the base of the abdomen cinereous; beneath, the abdomen is naked, the apical margins of the segments being rufo-piceous.

The male resembles the female, but sometimes has the wings paler.

Hab. Northern India; The Punjab. (Coll. Gen. Hearsay.)

14. *TACHYTES MODESTUS*.

B.M.

Female. Length 6-6½ lines.—Black: the head and thorax clothed with short silky pale golden pubescence; on the face it is very dense and shining; the scape at the apex in front, the palpi and mandibles rufo-testaceous, the tips of the latter rufo-piceous; the legs pale ferruginous; the coxæ, trochanters and base of the femora black; wings hyaline, the nervures and tegulæ rufo-testaceous. Abdomen thinly covered with a changeable pale golden pubescence; the basal and three following segments have a band of silvery pubescence; the apical segment margined and covered with short silvery hairs.

Hab. India.

15. *TACHYTES SINENSIS*.

B.M.

Female. Length 8 lines.—Black: the face densely covered with golden pubescence, the cheeks and outside of the mandibles thinly so. Thorax covered with pale yellow pubescence; the sides of the mesothorax, the post-scutellum, breast and hinder margin of the tubercles with a bright changeable golden pile; the legs have also a golden pile, and the tibiæ outside are covered with rich golden pubescence; the spines, calcaria and claws pale ferruginous; the wings flavo-hyaline, the nervures and tegulæ rufo-testaceous. The margins of the three basal segments of the abdomen have fasciæ of bright silvery pubescence, which are widest towards the lateral margins; the apical segment margined and covered with fusco-ferruginous pubescence.

The male closely resembles the female, but has the apical segment covered with silvery pubescence.

Hab. North China (Shanghai). (Coll. R. Fortune, Esq.)

Species of Africa.

Sect. 1. *Abdomen red and black.*

16. *TACHYTES DICHROA*.

Female. Length 8 lines.—Head and thorax black; the scape in front, the palpi and mandibles ferruginous; the face and cheeks

covered with pale golden pubescence. Thorax covered with pale golden pubescence, which is very dense on the sides of the meso- and metathorax; the latter has a central longitudinal channel, and is transversely striated, the apex truncate, the truncation transversely striated, the sides obliquely so; the wings yellowish hyaline, the nervures and tegulæ ferruginous; the legs and abdomen ferruginous; the coxæ and trochanters black; each segment has a large patch of shining silvery silky pubescence on each side; the apical segment covered with silvery pubescence, the margins carinated, the apex slightly emarginate.

Hab. The Gambia. (Coll. F. Smith.)

17. TACHYTES BASILICUS.

Lyrops basilius, Guér. *Icon. Règn. Anim.* iii. 440.

Hab. Senegal.

Sect. 2. Abdomen black.

18. TACHYTES NATALENSIS.

B.M.

Tachytes natalensis, Sauss. *Mém. Soc. Phys. Genève*, xiv. fasc. 1.

21. 10. t. f. 4 ♂.

Hab. Port Natal.

19. TACHYTES ALBOCINCTUS.

Tachytes albocincta, Lucas, *Explo. Sc. Algér.* iii. 250. 219. t. 14. f. 2.

Hab. Algeria.

20. TACHYTES AURIFRONS.

Tachytes aurifrons, Lucas, *Explo. Sc. Algér.* iii. 246. 211.

Hab. Algeria.

21. TACHYTES HIRSUTUS.

B.M.

Male. Length 6 lines.—Black: the head and thorax covered with a dense yellow pubescence, which has, in certain lights, a golden lustre; the face with a rich golden pubescence; the mandibles dark rufo-piceous; the palpi pale testaceous. Thorax: the wings hyaline, the nervures rufo-testaceous; the legs have a thin pale pubescence, and are covered with a pale golden pile; the apical joints of the tarsi ferruginous, the calcaria and claws ferruginous, the spines which arm the tibiæ and tarsi pale testaceous. Abdomen: the basal segment clothed with pale golden-yellow pubescence; the apical margins of the first, second and

third segments with a fascia of silvery pubescence; the four apical segments wanting.

Hab. Port Natal.

22. TACHYTES VELOX.

Male. Length 6-8½ lines.—Black: the head and thorax covered with thin ochraceous pubescence; the face densely clothed with pale golden pubescence; the mandibles rufo-piceous at their apex; the palpi pale testaceous. Thorax: the wings fulvo-hyaline, the nervures ferruginous, the costal nervure and the tegulae rufo-piceous; the apical margin of the anterior wings slightly fuscous; the tibiae and tarsi at the base covered outside with pale golden downy pile. Abdomen densely clothed with golden pubescence, which in different lights has a tessellated appearance; beneath, smooth and shining; the apical margins of the second and two following segments rufo-piceous, the fifth and sixth margins with bands of golden pubescence.

Hab. Africa (Gambia, W. Africa). (Coll. F. Smith.)

This species resembles *T. monetarius*, but it differs in the colour of the mandibles, the pubescence of the face, head and thorax, and also in having the abdomen entirely covered: in *T. monetarius* the base of the abdomen is black and covered with cinereous pubescence; the wings are also differently coloured.

23. TACHYTES AGILIS.

B.M.

Male. Length 4 lines.—Black: the face and cheeks with a little silvery pubescence; the apical joints of the palpi pale testaceous, the basal joints rufo-fuscous. The mesothorax and scutellum finely and closely punctured; the metathorax rugose above, obliquely so at the sides; wings subhyaline, the nervures fusco-ferruginous; the tibiae, tarsi and apex of the femora bright ferruginous. Abdomen smooth and shining, the margins of the segments with silvery fasciae; the tip of the abdomen ferruginous.

Hab. Port Natal.

Species of Australia and New Zealand.

Abdomen black.

24. TACHYTES TACHYRRHOSTUS.

B.M.

Tachytes tachyrrhostus, Sauss. *Mém. Soc. Phys. Genève*. xiv. fasc. 1. 18. 7. t. f. 5 ♂.

Female. Length 6-7 lines.—Black: the face covered with

silvery pubescence; the clypeus rounded anteriorly; the mandibles rufo-piceous at their apex. The mesothorax very convex, closely and finely punctured, not shining; the metathorax short, finely shagreened, rounded posteriorly; wings subhyaline, with a beautiful iridescence, the marginal cell without appendage; the nervures and scales ferruginous; the legs covered with silvery pile; the calcaria, spines and claws testaceous. Abdomen smooth and shining, the segments bordered with silvery bands.

Hab. New Holland.

25. *TACHYTES HYPOLEIUS.*

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head subopaque and sparingly punctured; the clypeus rounded in front, the sides emarginate; the mandibles rufo-piceous. The mesothorax and scutellum slightly shining, with delicate scattered punctures; the metathorax about the same length as the mesothorax, widest at the base, the apex truncated; the disk finely shagreened, the truncation and sides strigose; the wings fuscous, with a slight violet iridescence; the marginal cell appendiculated, the third submarginal cell curved and of equal width; the posterior tibiae covered with silvery pile within. Abdomen smooth and shining, covered with a thin silky pile, the apical margins of the segments with silvery bands; the apical segment smooth and shining, not margined at the sides; beneath, very smooth and shining.

Hab. Australia (Swan River).

26. *TACHYTES NIGERRIMUS.*

B.M.

Larra nigerrima, *White, Zool. Erebus and Terror.*

Female. Length $5\frac{1}{2}$ lines.—Intensely black and shining, the face with a thin silvery pubescence; the clypeus rounded anteriorly and emarginate in the middle. The mesothorax and scutellum sparingly and delicately punctured; the metathorax truncate behind, finely shagreened and opaque; the truncation transversely striated, the sides obliquely so; the wings hyaline, the nervures black, the marginal cell without an appendage at the apex, having merely a fuscous line. Abdomen short and conical, very smooth and shining.

Hab. New Zealand.

27. *TACHYTES SERICOPS.*

B.M.

Larra sericops, *White, Zool. Erebus and Terror.*

Female. Length $3\frac{1}{2}$ lines.—Black: the head and thorax covered with short cinereous pubescence, the face covered with silvery

pubescence; the anterior margin of the clypeus rounded; the tips of the mandibles rufo-piceous. The wings hyaline, the nervures rufo-fuscous, the marginal cell truncate at the apex; the hinder margin of the tegulæ pale testaceous; the legs have a changeable silvery pubescence. The abdomen with a brilliant silvery pile, most dense on the apical margins of the segments.

Hab. New Zealand.

Species of South America.

Sect. 1. Abdomen red and black.

28. *TACHYTES BICOLOR.*

B.M.

Larra bicolor, *Fabr. Syst. Piez.* 221. 12.

Hab. Brazil (Para; Villa Nova).

29. *TACHYTES AMAZONUM.*

B.M.

Female. Length 6 lines.—Head and thorax black; the face clothed with pale golden pubescence; the mandibles pale rufo-testaceous at the base; the cheeks with a thin golden pubescence. Thorax: the lateral and posterior margins of the mesothorax covered with bright golden pubescence; on the disk it is sparing, short and fulvous; the post-scutellum and sides of the metathorax with a dense golden pubescence; the sides beneath the wings, the breast, the coxæ and legs with a changeable golden lustre, very bright on the posterior tibiæ outside; the knees, tips of the joints of the tarsi, the anterior pair entirely, and the claw-joints ferruginous; the basal joint of the anterior tarsi more or less fuscous above; wings hyaline, the nervures ferruginous, the tegulæ pale rufo-testaceous. Abdomen ferruginous, having, when viewed longitudinally, a golden band on the margin of each segment, but when viewed sideways, the margins appear naked and the intervening parts covered with golden pile; the apical segment carinated at the sides and clothed with golden pubescence; in some examples the third, fourth, and sometimes the fifth segment have a transverse black stripe.

Male.—This sex resembles the female, but is smaller, and has the legs entirely of an obscure red; the abdomen fuscous, with the apical margins of the segments ferruginous; covered with golden pile, and exhibiting the same differences as the other sex.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

30. *TACHYTES CONCINNUS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Head and thorax black; the face covered with pale golden pubescence; the mandibles yellow at the base and rufo-piceous towards the apex; the head and thorax have a long thin cinereous pubescence; the cheeks, prothorax, a spot before and another behind the wings, clothed with bright golden pubescence; the legs have a pale golden pile, the tarsi ferruginous, the calcaria and spines which arm the tibiae of the same colour; the wings hyaline, the nervures and tegulae pale ferruginous. Abdomen: the first and second segments red, the base of the former black; the apical margins of the three basal segments with bands of pale golden pubescence, the apical segment covered with bright silvery pubescence.

Hab. Brazil (Santarem).

31. *TACHYTES UNDATUS*.

B.M.

Female. Length 3 lines.—Head and thorax black and closely punctured, the face with a silvery pubescence; the sides of the thorax and the legs have also a thin fine short silvery pubescence; the apical joints of the tarsi ferruginous; the spines which arm the tibiae and tarsi pale testaceous; the wings hyaline and iridescent, the nervures black. Abdomen ferruginous, smooth and shining.

Hab. Brazil (Villa Nova).

32. *TACHYTES CHILENSIS*.

Larra chilensis, *Spin. Gay's Chili*, vi. 324. 2.

Hab. Chili. (Coll. F. Smith.)

33. *TACHYTES? GAYI*.

Larra Gayi, *Spin. Gay's Chili*, vi. 324. 3.

Hab. Chili.

34. *TACHYTES RUFITARSIS*.

Larra rufitarsis, *Spin. Gay's Chili*, vi. 323. 1.

Hab. Chili.

Sect. 2. *Abdomen black*.35. *TACHYTES APIFORMIS*.

B.M.

Female. Length 7 lines.—Black: the head and thorax clothed with short pale ochraceous pubescence; that on the face is dense

and silvery; tips of the mandibles rufo-piceous, the apical joints of the palpi pale rufo-testaceous. Thorax opaque, the scutellum shining and punctured; wings subhyaline, the fore-wings tinged with yellow, their anterior margins fuscous, the nervures ferruginous; the calcaria, the spines which arm the tibiæ and tarsi, and the claw-joint of the latter, rufo-testaceous; the legs have a thin pale pubescence, most dense on the anterior femora; they have also in parts a pale golden lustre, most bright on the posterior tibiæ outside. Abdomen subovate, fuscous-black, the apical margins of the segments rufo-piceous and covered with fine golden pile, the apical segment with bright golden pubescence, beneath smooth and shining; the margins of the segments rufo-piceous.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

36. TACHYTES BELLA.

Tachytes bella, *St. Farg. Hym.* iii. 248. 10.

Hab. Brazil.

37. TACHYTES JUCUNDUS.

B.M.

Female. Length 8 lines.—Black: the face and cheeks clothed with golden pubescence; the clypeus with large shallow punctures on each side, the anterior margin with a minute notch in the middle; the mandibles yellow towards their apex, the tips black, the palpi pale testaceous. Thorax: the margins of the mesothorax covered with bright golden pubescence; the sides of the thorax and the metathorax have a changeable bright golden pubescence; the disk of the thorax and the scutellum closely and finely punctured, interspersed with larger punctures; the wings flavo-hyaline, their apical margins faintly clouded, the nervures pale testaceous; the legs have a changeable golden lustre, that on the posterior tibiæ outside, very brilliant; the calcaria, spines and claws ferruginous. Abdomen covered with thin cinereous pile, the apical margins of the segments with pale golden fasciæ, the apical segment covered above with fusco-ferruginous pubescence; the sides carinate; beneath, smooth and shining, with scattered punctures; the apical margins of the segments rufo-piceous.

Hab. Brazil (Villa Nova).

38. TACHYTES PLUTO.

Female. Length 8 lines.—Deep black: the face shining, the sides covered with silvery pubescence; the anterior margin of the

47. *TACHYTES PEPTICUS*.*Lyrops peptica*, Say, *Bost. Journ.* i. 371. 2.*Hab.* North America (Indiana).Genus 5. *GASTROSERICUS*.*Gastrosericus*, *Spin. Ann. Soc. Ent. Fr.* vii. 480 (1838).

This genus was established by Spinola for the reception of a single specimen of a male insect closely resembling a *Tachytes*, but differing in having only two complete submarginal cells. There are also figures of three other examples in the plates to Savigny's *Egypt*, tab. 12. figs. 17, 18, 19. All the species known are from Egypt.

1. *GASTROSERICUS WALTII*.*Gastrosericus Waltii*, *Spin. Ann. Soc. Ent. Fr.* vii. 481 ♂.*Dahlb. Hym. Europ.* i. 467. 1.*Hab.* Egypt.2. *GASTROSERICUS DREWSENI*.*Gastrosericus Drewseni*, *Dahlb. Hym. Europ.* i. 467. 2 ♀.*Hab.* Egypt.Genus 6. *ASTATA*.*Spheg*, pt., *Schrank, Ins. Austr.* 384 (1781).*Astata*, *Latr. Précis Car. Ins.* (1796).*Tiphia*, *Panz. Faun. Germ. fasc.* 53 (1795-1805).*Larra*, *Donov. Brit. Ins.* xii. 73.*Dimorpha*, *Jurine, Hym.* 140 (1807).1. *ASTATA BOOPS*.

B.M.

Spheg boops, *Schrank, Enum. Ins. Austr.* 384. 777.*Vill. Ent.* iii. 249. 82.*Gmelin*, i. 2734. 89.*Rossi, Faun. Etrus.* i. 128. 284.*Tiphia abdominalis*, *Panz. Faun. Germ.* 53. 5.*Larra pompiliformis*, *Donov. Brit. Ins.* xii. 73. t. 420.*Astata abdominalis*, *Latr. Hist. Nat.* xiii. 297. 1; *Nowv. Dict.* ed. 2. iii. 25.*St. Farg. Encycl. Méth.* x. 144.

Astata boops, *Spin. Ins. Lig.* i. 72. 1.

Van d. Lind, Obs. ii. 27. 1.

Shuck. Foss. Hym. p. 97. 1.

Dahlb. Hym. Europ. i. 140. 72.

St. Farg. Hym. iii. 256. 1.

Guér. Icon. Règ. An. iii. 441. t. 71. f. 1.

Lucas, Explo. Sc. Algér. iii. 260. t. 12. f. 7.

Wesm. Hym. Foss. Belg. p. 73.

Astata victor, *Curtis, Brit. Ent.* vi. t. 261.

Astata Vanderlindenii, *Robert, Mag. Zool. (Guér.)* t. 76 (1843).

Hab. Britain; France; Italy; Germany; Austria; Sweden.

2. ASTATA STIGMA.

B.M.

Dimorpha stigma, *Panz. Faun. Germ.* 107. 13.

Astata stigma, *Van d. Lind, Obs.* ii. 29. 4.

Dahlb. Hym. Europ. i. 139. 69.

Larra pinguis, *Zett. Ins. Lapp.* 436. 1.

Dahlb. Exercit. Hym. 50. 2.

Astata jaculator, *Smith, Zool.* iv. 1157.

Hab. Britain; Germany; France; Sweden; Norway; Lapland.

3. ASTATA OCLATA.

Dimorpha oculata, *Jurine, Hym.* 146. t. 9.

Astata oculata, *Van d. Lind, Obs.* ii. 28. 2.

Dahlb. Hym. Europ. i. 140. 72.

Hab. Europe.

4. ASTATA AFFINIS.

Astata affinis, *Van d. Lind, Obs.* ii. 28. 3 ♂.

Dahlb. Hym. Europ. i. 142. 74.

Hab. Spain.

5. ASTATA CHILENSIS.

Astata Chilensis, *Sauss. Mém. Soc. Phys. Genève*, xiv. 23. 12.

Hab. Chili. (Coll. F. Smith.)

6. ASTATA SPINOLÆ.

Astata abdominalis, *Spin. Faun. Chil. Zool.* vi. 321. 1 (nec Latr.).

Astata Spinolæ, *Sauss. Mém. Soc. Phys. Genève*, xiv. 22. 11.

Hab. Chili.

7. *ASTATA INTERMEDIA*.

Astata intermedia, *Dahlb. Hym. Europ.* i. 140. 71.

Hab. Germany.

8. *ASTATA VANDERLINDENII*.

Astata Vanderlindenii, *Robert, Mag. Zool.* (1833) t. 268.

Hab. Spain.

9. *ASTATA HISTRIO*.

Astata histrio, *St. Farg. Hym.* iii. 257. 2 ♀.

Lucas, Explo. Sc. Algér. iii. 260.

Hab. Algeria.

10. *ASTATA NIGRA*.

Astata unicolor, *St. Farg. Hym.* iii. 258. 3 (1845) (nec *Say*).

Lucas, Explo. Sc. Algér. iii. 261 ♂.

Hab. Algeria.

11. *ASTATA UNICOLOR*. Pl. VIII. fig. 1.

B.M.

Astata unicolor, *Say, Exped. St. Peter's River (Keating)* (1823).

Hab. North America (Missouri).

12. *ASTATA RUFITARSIS*.

Male. Length 4 lines.—Black: the head, thorax, and base of the abdomen thinly clothed with long silvery-white pubescence; the mandibles, tarsi, and apex of the abdomen ferruginous; the pro- and mesothorax strongly punctured; the scutellum punctured at the sides, smooth and shining in the middle; the metathorax finely reticulated; the wings have a slight fuscous cloud which extends to the apex of the marginal cell, beyond which they are clear hyaline; the inferior wings hyaline; the nervures black.

Hab. Cape of Good Hope. (Coll. W. W. Saunders, Esq.)

13. *ASTATA AUSTRALASIE*.

Astata Australasie, *Shuck. Trans. Ent. Soc.* ii. 72. 1.

Hab. New Holland. (Coll. F. Smith.)

14. *ASTATA ORIENTALIS*.

Male. Length 4 lines.—Black: the head and thorax covered with a thin silvery pubescence; the mesothorax and scutellum punctured, the latter smooth and shining in the middle; on the

mesothorax in front are four slightly raised smooth carinæ which terminate before the middle; the two lateral carinæ elevated at their extremity, forming minute tubercles; the wings flavo-hyaline, their apical margins clear, the nervures ferruginous. The margins of the segments of the abdomen depressed, the first, second and basal half of the third red; the extreme base of the abdomen red.

Hab. India. (Coll. W. W. Saunders, Esq.)

Genus 7. MISCOPHUS.

Larra, pt., *Panz. Faun. Germ. fasc.* 106.

Miscophus, *Jurine, Hym.* 206.

The species of this genus being of rare occurrence, and the male of the type, *M. bicolor*, varying from black and red to a totally black insect, it is most probable that one or more of the following species are only varieties of the type.

1. MISCOPHUS BICOLOR.

B.M.

Miscophus bicolor, *Jurine, Hym.* 206. t. 11. gen. 25 ♀.

Latr. Gen. Crust. et Ins. iv. 72.

Guér. Dict. Class. Hist. Nat. x. 632.

Van d. Lind, Obs. ii. 25. 1.

Shuck. Foss. Hym. 92. 1.

Dahlb. Hym. Europ. 235. 135.

Smith, Zool. ii. 697 ♂ ♀.

St. Farg. Hym. iii. 237. 1. t. 27. f. 6 ♀.

Steph. Illustr. Mand. Supp. vii. 12. t. 42. f. 3 ♀.

Wesm. Hym. Foss. Belg. 72. 1.

Larra dubia, *Panz. Faun. Germ.* 106. 14 ♀.

Hab. Britain; France; Germany; Belgium; Scandinavia; Sweden.

2. MISCOPHUS CONCOLOR.

Miscophus concolor, *Dahlb. Hym. Europ.* i. 236. 137 ♂ ♀.

Wesm. Hym. Foss. Belg. 72. 2.

Hab. Scandinavia; Germany (Berlin); Belgium (Brussels).

3. MISCOPHUS NIGER.

Miscophus niger, *Dahlb. Hym. Europ.* i. 236. 136 ♂ ♀.

Hab. Germany; Gothland.

4. *MISCOPHUS SPURIUS*.

Larra spuria, *Dahlb. Exercit. Hym.* 56. 7.

Miscophus spurius, *Dahlb. Hym. Europ.* i. 237. 138 ♂ ♀.

Hab. Germany; Finland.

Genus 8. *SOLIERELLA*.

Solierella, *Spin. Gay's Chili*, vi. 349.

Antennæ inserted in the middle of the face. Venter convex. The anterior tarsi spinose in both sexes. The superior wings with one marginal and three submarginal cells, the second submarginal cell petiolated and receiving the two recurrent nervures.

1. *SOLIERELLA MISCOPHOIDES*. Pl. VIII. fig. 2.

Solierella miscophoides, *Spin. Gay's Chili*, vi. 352. 1, *Atlas, Hym.* 2. f. 5.

Hab. Chili.

Genus 9. *DINETUS*.

Crabro, pt., *Fabr. Ent. Syst.* ii. 293 (1793).

Sphex, pt., *Fabr. Ent. Syst.* ii. 198 (1793).

Pompilus, pt., *Fabr. Syst. Piez.* 187 (1804).

Larra, pt., *Latr. Hist. Nat. Ins.* xiii. 296 (1805).

Dinetus, *Jurine, Hym.* 209 (1808).

1. *DINETUS PICTUS*.

Crabro pictus, *Fabr. Ent. Syst.* ii. 229. 20 ♂.

Panz. Faun. Germ. 17. 19 ♂. 72. 10 ♀.

Sphex gutta, *Fabr. Ent. Syst.* ii. 215. 72 ♀.

Crabro ceraunius, *Rossi, Faun. Etrus. Mant.* ii. *App.* 123. iii. ♀.

Pompilus guttatus, *Fabr. Ent. Syst. Supp.* 252. 34; *Syst. Piez.* 196. 44.

Larra picta, *Latr. Hist. Nat.* xiii. 296 ♂.

Spin. Ins. Lig. i. 73. 4.

Dinetus pictus, *Jurine, Hym.* 209. t. 11. gen. 26 ♀.

Panz. Krit. Revis. ii. 193.

Latr. Gen. Crust. et Ins. 73.

Guér. Dict. Class. Hist. Nat. ix. 496.

Van d. Lind, Obs. ii. 26. 1.

Shuck. Foss. Hym. 94. 1.

Dahlb. Hym. Europ. i. 232. 134 & 467.

St. Farg. Hym. iii. 234. 1. t. 27. f. 5 ♂.

Guér. Icon. Règ. Anim. t. 70. f. 10.

Dinetus pictus, *Steph. Illustr. vii. Supp.* 12. t. 42. f. 3.

Wesm. Hym. Foss. Belg. 73. 1.

Hab. Britain; France; Italy; Germany; Belgium; Austria.

Genus 10. PISON.

Alyson, pt., *Spin. Ins. Lig.* ii. 253 (1806-8).

Pison, pt., *Spin. Ins. Lig.* ii. 256.

Tachybulus, *Latr. Gen. Crust. et Ins.* iv. 75 (1809).

Nephridia, *Brullé, Trans. Ent. Soc. Fr.* ii. 75 (1833).

1. PISON ATER.

Alyson ater, *Spin. Ins. Lig.* ii. fasc. 4. 253. t. 3. f. 12 ♂.

Pison Jurinii, *Spin. Ins. Lig.* ii. 256.

St. Farg. et Serv. Ency. Méth. x. 143. 1.

Van d. Lind, Obs. ii. 39. 1.

St. Farg. Hym. iii. 230. 1.

Tachybulus niger, *Latr. Gen. Crust. et Ins.* iv. 75.

Pison ater, *Shuck. Trans. Ent. Soc.* ii. 75. 1.

Hab. Italy; France.

2. PISON PUNCTIFRONS.

B.M.

Pison punctifrons, *Shuck. Trans. Ent. Soc.* ii. 77. 5 ♀.

Hab. India or St. Helena.

3. PISON RUGOSUS.

Female. Length 4 lines.—Black: clothed with silvery pubescence, especially the face, cheeks, legs, and apical margins of the segments of the abdomen; the sides of the thorax and metathorax, and also the base of the abdomen, with long glittering silvery-white pubescence; the head, mesothorax and scutellum coarsely punctured; the base of the metathorax coarsely obliquely striated, with a central deep longitudinal channel which is transversely striated as well as the truncated portion; the sides of the thorax and the pectus strongly punctured; the wings hyaline, the nervures testaceous; the first recurrent nervure received towards the apex of the first submarginal cell, and the second recurrent nervure received about the middle of the second submarginal cell. Abdomen shining, the basal segment with strong scattered punctures, the following segments much more finely punctured, and most densely so towards the apex.

Hab. India. (Coll. W. W. Saunders, Esq.)

This species belongs to Shuckard's subgenus (*Pisonitus*).

4. PISON REGALIS. Pl. VIII. fig. 3.

B.M.

Pison regalis, *Smith, Trans. Ent. Soc. New Ser. ii. 34. t. 8. f. 9 ♀.**Hab.* North China (Ning-po-foo).

5. PISON XANTHOPUS.

B.M.

Nephridia xanthopus, *Brullé, Ann. Soc. Ent. Fr. ii. 403.*Pison xanthopus, *Shuck. Trans. Ent. Soc. ii. 75. 2.*Pison obscurus, *Shuck. Trans. Ent. Soc. ii. 75. 3 (var.).**Hab.* Cape of Good Hope.

6. PISON AURATUS.

Pison auratus, *Shuck. Trans. Ent. Soc. ii. 78. 4 ♀.**Hab.* Cape of Good Hope. (Type in Coll. F. Smith.)

7. PISON ARGENTATUS.

B.M.

Pison (Pisonitus) argentatus, *Shuck. Trans. Ent. Soc. ii. 79. 9 ♀.**Hab.* The Mauritius.

8. PISON MARGINATUS.

B.M.

Female. Length 5 lines.—Black: the head opaque, the face with silvery pubescence. The mesothorax and scutellum slightly shining, closely punctured; the metathorax obliquely rugose, the central channel without a carina, the truncation transversely rugose; the wings subhyaline, darkest towards their apical margins; the nervures testaceous, the outer margin of the tegulae pale, the costal nervure fuscous; the two recurrent nervures uniting with the nervures of the petiolated second submarginal cell. Abdomen thinly covered with cinereous pubescence, very finely punctured, the apical margins of the segments pale testaceous.

Hab. Australia (Hunter River).

9. PISON PERPLEXUS.

B.M.

Male. Length $5\frac{1}{2}$ lines.—Black: the face thinly covered with silvery pubescence; the mesothorax and scutellum very closely and finely punctured; the metathorax rugose, indistinctly obliquely so, the central channel with a carina which terminates a little before the verge of the truncation, the latter transversely coarsely sulcate, and having a central deeply impressed line; the wings hyaline, their apical margins with a fuscous border; the nervures testaceous, the costal nervure fuscous, the two recurrent nervures received by the second submarginal cell distinctly within.

Abdomen closely punctured, the apical margins of the segments with uninterrupted silvery fasciæ.

Hab. Australia.

This species resembles the *P. Westwoodii*, but differs in having a carina in the channel of the metathorax, and in the sculpture; the neuration of the wings appears to be the same.

10. *PISON VESTITUS*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the face covered with silvery pubescence, intermixed on the elypeus with longer fuscous hairs; the posterior margin of the prothorax covered with golden pubescence; the meso- and metathorax without pubescence, the latter in fresh examples would probably have a covering of pale pubescence; the mesothorax closely punctured, the scutellum less closely so; the metathorax shining and finely punctured, with a slightly impressed channel, in which is a carina that extends to the verge of the truncation; the latter transversely sulcate, and having a deep depression above; wings fuscous, the two recurrent nervures uniting with the nervures of the petiolated second submarginal cell; legs simple, without spines or cilia. Abdomen shining, the apical margins of the segments with fasciæ of golden pubescence.

Hab. Australia.

11. *PISON SPINOLÆ*.

B.M.

Pison Spinolæ, *Shuck. Trans. Ent. Soc.* ii. 76. 4 ♀.

Pison Australis, *Sauss. Mém. Soc. Phys. Genève*, xiv. 11. t. f. 2 ♀?

Hab. Sydney; Van Diemen's Land. (Type in Coll. F. Smith.)

P. Australis is said to differ from *P. Spinolæ* in being smaller, in wanting the carinæ on the mandibles, and in having horizontal striæ on the metathorax, instead of oblique ones as in *P. Spinolæ*. On examining the typical specimen of *P. Spinolæ* and referring to the description, it is found that the carina is not on the external face of the mandible, but on the upper surface, so that when the mandibles are closed, it is not visible. The size of the species varies greatly; the metathorax of the typical specimen is only obliquely striated at the base; on the truncation, or posterior part, it is transverse.

12. *PISON (PISONITUS) RUFICORNIS*.

B.M.

Female. Length 3 lines.—Black: the face densely covered with silvery pubescence which has a faint golden tinge; the

palpi, mandibles and antennæ ferruginous, the tip of the latter fuscous. The mesothorax and scutellum very closely and delicately punctured; the metathorax obliquely and coarsely striated, having a central longitudinal channel and an abbreviated carina at the base; the truncation coarsely rugose, with a deep central longitudinal furrow; the wings hyaline and iridescent, the nervures testaceous, the stigma fuscous, the tegulæ pale testaceous; the legs ferruginous, the coxæ and femora dusky. Abdomen: the basal margin of the second segment depressed; the apical margin of the first segment narrowly, that of the second more broadly, and the four apical segments rufo-testaceous.

Hab. Australia (MacIntyre River).

13. PISON WESTWOODII.

B.M.

Pison Westwoodii, *Shuck. Trans. Ent. Soc.* ii. 77. 6 ♀.

Hab. Van Diemen's Land.

14. PISON TASMANICUS.

Male. Length $4\frac{1}{2}$ –5 lines.—Black: the head and thorax subopaque; the face covered with silvery pubescence; the head, thorax and legs with a long thinly scattered griseous pubescence; the metathorax obliquely striated, the carina which usually runs down the central channel obsolete; wings fusco-hyaline, the apical margins of the wings with a fuscous border; the first recurrent nervure entering the first submarginal cell at its extreme apex, the second received by the third submarginal cell at its extreme base; the intermediate and posterior tibiæ with a few short scattered spines; the apical margins of the segments of the abdomen with fasciæ of silvery pubescence.

Hab. Van Diemen's Land.

Very probably the male of *P. Spinolæ*.

15. PISON OBLIQUUS.

Female. Length 4 lines.—Black: the head and thorax opaque, the face covered with silvery pubescence; the metathorax obliquely striated, the central channel nearly obsolete, shallow, and with the striæ crossing the depression; the truncation transversely striated; the wings subhyaline, their apical margins with a fuscous cloud; the apical margins of the segments with indistinct bands of silvery pile; probably, in fine examples, the bands are distinct.

Hab. Van Diemen's Land. (Coll. W. W. Saunders, Esq.)

The neuration of the wings is the same as that of *P. Spinolæ*.

16. *PISON RUFIPES*.

Pison (*Pisonitus*) *rufipes*, *Shuck. Trans. Ent. Soc.* ii. 79. 8 ♀.

Hab. Van Diemen's Land. (Type in Coll. F. Smith.)

17. *PISON MOROSUS*.

B.M.

Pison morosus, *White, Voy. Erebus and Terror*.

Female. Length 4 lines.—Jet-black: the face with a little silvery pubescence, the head opaque. The mesothorax very delicately and closely punctured; an abbreviated shining raised line on each side over the tegulæ; the metathorax obliquely strigose, the central channel slightly impressed, the striae uniting and crossing it; the truncation transversely rugose, its margin slightly rounded; the wings hyaline, their apical margins slightly fuscous, the two recurrent nervures uniting with the nervures of the petiolated submarginal cell. Abdomen smooth and shining, the margins of the segments slightly depressed.

Hab. New Zealand.

18. *PISON PARAENSIS*.

Pison Paraensis, *Spin. Mem. Accad. Torino*, xiii. 58. 40 (1853).

Hab. Brazil (Para).

19. *PISON CHILENSIS*.

Pison chilensis, *Spin. Gay's Chili*, vi. 326. 1.

Hab. Chili.

20. *PISON AREOLATUS*.

Pison areolatus, *Spin. Gay's Chili*, vi. 327. 2.

Hab. Chili.

21. *PISON LÆVIS*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Head opaque, the face covered with silvery pubescence; the metathorax smooth and shining, with a few scattered punctures at the sides, the central channel without a carina; a deep elongate-ovate fossula in the middle of the truncation, the margins of the latter rounded; the wings slightly fuscous, the nervures black; the two recurrent nervures uniting with the nervures of the petiolated submarginal cell. Abdomen smooth and shining, very delicately punctured, the margins of the segments slightly depressed.

Hab. Georgia.

Fam. 5. BEMBICIDÆ.

The labrum produced into a beak.

Bembicites, *Latr. Hist. Nat. Ins.* (1802).

Bembecinæ, *Fallen, Nov. Hym. Disp. Meth.* (1813).

Bembicides, *Latr. Gen. Crust. et Ins.* iv. (1807).

Bembicites, *Newm. Ent. Mag.* ii. (1834).

Bembicidæ, *Westw. Introd. Class. Ins. (Synop.)* (1840).

Genus 1. BEMBEX.

Apis, pt., *Linn. Syst. Nat.* i. 957 (1766).

Bembyx, pt., *Fabr. Syst. Ent.* 361 (1775).

Bembex, pt., *Fabr. Mant.* 285 (1787).

Vespa, pt., *Gmelin*, 2768. 153 (1789).

1. BEMBEX ROSTRATA.

B.M.

Apis rostratra, *Linn. Faun. Suec.* No. 1700; *Syst. Nat.* i. 957. 25.
Vill. Ent. iii. 294. 21.

Bembex rostrata, *Fabr. Syst. Ent.* 362. 3; *Ent. Syst.* ii. 248. 3;
Syst. Piez. 223. 5.

Panz. Faun. Germ. i. 10; *Krit. Revis.* ii. 132.

Latr. Hist. Nat. Crust. et Ins. xiii. 300. 1; *Gen. Crust. et Ins.* iv. 98.

Oliv. Encycl. Méth. iv. 29. 3.

Duméril, Dict. Sc. Nat. iv. 297; *Icon. Entom. et Consid.* i.
t. 30. f. 10.

Guér. Icon. R. Anim. Ins. iii. 438. t. 70. f. 7.

Van d. Lind, Obs. Hym. Europ. ii. 9. I.

Dahlb. Hym. Europ. i. 173. 107.

St. Farg. Hym. iii. 260. 1.

Lucas, Explo. Sc. Algér. iii. 263.

Wesm. Hym. Foss. Belg. p. 74.

Vespa (*Bembex*) *rostrata*, *Gmel.* 2768. 153.

Vespa armata, *Sulzer, Hist. Ins.* t. 27. f. 10.

Reaum. Gen. t. 27. f. 10.

Christ. Hym. p. 220. t. 29. f. 2 ♂.

Hab. Italy; France; Germany; Austria; Sweden; Finland;
Algeria.

2. BEMBEX OLIVACEA.

B.M.

Bembex olivacea, *Fabr. Mant. Ins.* i. 285. 4 ♂.

Rossi, Faun. Etrus. ii. 81. 858 ♂ ♀.

Latr. Gen. Crust. et Ins. iv. 99.

Van d. Lind, Obs. ii. 13. 7.

- Bembex olivacea*, *Dahlb. Hym. Europ.* i. 178. 113.
Brullé, Hist. Nat. Il. Canar. iii. 90. 46.
St. Farg. Hym. iii. 268. 6.
Lucas, Explo. Sc. Algér. iii. 263.
Bembex glauca, *Fabr. Mant. Ins.* i. 285. 5 ♀; *Ent. Syst.* ii. 249. 5;
Syst. Piez. 224. 8.
Spin. Ins. Lig. ii. 174. 3.
Oliv. Encycl. Méth. iv. 291. 6.
St. Farg. Hym. iii. 270. 7.
Lucas, Explo. Sc. Algér. iii. 263.
Bembex olivata, *Dahlb. Hym. Europ.* i. 490 (var.).
Hab. France; Italy; Germany; Spain; Portugal; Algeria;
 Tranquebar.

3. BEMBEX OCULATA.

B.M.

- Bembex oculata*, *Jurine, Hym.* 175. t. 10. gen. 16 ♂.
Panz. Faun. Germ. 84. 22; *Krit. Revis.* ii. 132.
Spin. Ins. Lig. ii. 173.
Van d. Lind, Obs. ii. 13. 6.
Dahlb. Hym. Europ. i. 178. 112.
Lucas, Explo. Sc. Algér. iii. 262.
Hab. France; Germany; Italy.

4. BEMBEX REPANDA.

B.M.

- Bembex repanda*, *Latr. Gen. Crust. et Ins.* iv. 98. 3.
Van d. Lind, Obs. ii. 10. 3.
Dahlb. Hym. Europ. i. 177. 109.
Lucas, Explo. Sc. Algér. iii. 263.
Bembex Latreillii, *St. Farg. Hym.* iii. 266. 5.
Hab. France.

5. BEMBEX LABIATA.

- Bembex labiata*, *Fabr. Ent. Syst. Supp.* 259. 5; *Syst. Piez.* 224. 9.
Coqueb. Illustr. dec. ii. 61. t. 15. f. 1.
Van d. Lind, Obs. ii. 14. 8.
Dahlb. Hym. Europ. i. 179. 114.
Hab. France.

6. BEMBEX BIDENTATA.

B.M.

- Bembex bidentata*, *Van d. Lind, Obs.* ii. 11. 5.
Dahlb. Hym. Europ. i. 178. 111.
St. Farg. Hym. iii. 269. 2.
Hab. France; Italy.

7. *BEMBEX TARSATA.*

B.M.

Bembex tarsata, *Latr. Gen. Crust. et Ins.* iv. 98. 2.*Van d. Lind, Obs.* ii. 10. 2.*Dahlb. Hym. Europ.* i. 176. 108.*St. Farg. Hym. Europ.* iii. 265. 4.*Hab.* South of France; Paris; Turin.8. *BEMBEX SINUATA.*

B.M.

Bembex sinuata, *Panz. Faun. Germ.* 86. 13; *Krit. Revis.* p. 132.*Latr. Gen. Crust. et Ins.* iv. 98. 4.*Van d. Lind, Obs.* ii. 10. 4.*Dahlb. Hym. Europ.* i. 117. 110.*Hab.* Germany; France.9. *BEMBEX DISSECTA.**Bembex dissecta*, *Dahlb. Hym. Europ.* i. 487. 6.*Hab.* South of Europe.10. *BEMBEX WILDEI.**Bembex wildei*, *Dahlb. Hym. Europ.* i. 491. 25.*Hab.* Central Europe.11. *BEMBEX UNDATA.**Bembex undata*, *Dahlb. Hym. Europ.* i. 487. 7.*Hab.* Central Europe.12. *BEMBEX VIDUA.**Bembex vidua*, *St. Farg. Hym. Europ.* i. 264. 3.*Hab.* Lombardy.13. *BEMBEX MEGERLEI.**Bembex Megerlei*, *Dahlb. Hym. Europ.* i. 492. 34.*Hab.* Austria.14. *BEMBEX NEGLECTA.**Bembex neglecta*, *Dahlb. Hym. Europ.* i. 489. 12.*Hab.* Austria.15. *BEMBEX MELÆNA.*

B.M.

Male. Length 7 lines.—Black: the scape in front, the ante-

rior half of the clypeus, a line on the inner orbit of the eyes, the labrum and mandibles, white; the tips of the mandibles ferruginous; the head, thorax and base of the abdomen have a thin griseous pubescence; beneath, the hinder margin of the metathorax sometimes with a yellow spot; the coxæ, trochanters and femora black; the tips of the latter, the tibiæ and tarsi, pale yellow; the intermediate femora serrated beneath; the tibiæ have a black stripe behind; the wings hyaline, the nervures and hinder margin of the tegulæ ferruginous. Abdomen black: the second segment with a large compressed curved tooth beneath; the sixth segment with a small trigonate tubercle in the middle.

Var. β . The basal segment with a narrow line on each side, and the two following segments with a curved stripe on each side.

Hab. Albania.

16. *BEMBEX ROSSII*.

Bembex Rossii, *Dahlb. Hym. Europ. i.* 492. 31.

Hab. Spain.

17. *BEMBEX NOTATA*.

Bembex notata, *Dahlb. Hym. Europ. i.* 491. 28.

Hab. Rhodes.

18. *BEMBEX TURCA*.

Bembex turca, *Dahlb. Hym. Europ. i.* 488. 11.

Hab. Rhodes.

19. *BEMBEX BASALIS*.

Bembex basalis, *Dahlb. Hym. Europ. i.* 490. 20.

Hab. Rhodes.

20. *BEMBEX FLAVESCENS*.

Male. Length 7 lines.—Head and thorax black; the labrum, clypeus, inner orbit of the eyes, the scape in front, and the mandibles, yellow; the tips of the mandibles ferruginous; the outer orbit of the eyes yellow; the flagellum fulvous beneath, and four or five of the apical joints subpectinate beneath. Thorax: a narrow line on the collar, two abbreviated ones on the mesothorax in front, a stripe over the tegulæ, a narrow line on the posterior margin of the scutellum and post-scutellum, a curved one on the metathorax, and its posterior angles, yellow; the sides of the thorax irregularly maculated with yellow; the legs yellow,

with a black spot on the trochanters and another at the extreme base of the femora beneath. Abdomen yellow, the extreme base black; a transverse black line in the middle of the posterior margin of the first segment, and two similar lines at the base of the three following segments; the second segment beneath black at its base, with a compressed curved acute tooth in the middle; the second segment has a narrow black line at its basal margin, and the two following a bilobed spot; an angular spot at the base of the sixth segment.

Hab. Teneriffe. (Coll. F. Smith.)

21. *BEMBEX CHLOROTICA.*

Bembex chlorotica, *Spin. Ann. Soc. Ent. Fr.* vii. 469. 21 (1838).
St. Farg. Hym. iii. 276. 11.

Hab. Egypt.

22. *BEMBEX SOROR.*

Bembex soror, *Dahlb. Hym. Europ.* i. 489. 13.

Hab. Egypt.

23. *BEMBEX LUSCA.*

B.M.

Bembex lusca, *Spin. Ann. Soc. Ent. Fr.* vii. 467. 20 (1838).
St. Farg. Hym. iii. 274. 10.

Hab. Egypt.

24. *BEMBEX WESTERMANNI.*

Bembex Westermanni, *Spin. Ann. Soc. Ent. Fr.* vii. 470. 13 (1838).

Hab. Egypt.

25. *BEMBEX PECTORALIS.*

Bembex pectoralis, *Dahlb. Hym. Europ.* i. 489. 17.

Hab. Nubia.

26. *BEMBEX FISCHERI.*

Bembex Fischeri, *Spin. Ann. Soc. Ent. Fr.* vii. 470 (1838).

Hab. Africa.

27. *BEMBEX CAPENSIS.*

Bembex Capensis, *St. Farg. Hym.* iii. 273. 9.

Hab. Cape of Good Hope.

28. *BEMBEX CARINATA*.

B.M.

Female. Length 7 lines.—Black: the clypeus, labrum, scape in front, and the mandibles, yellow; the orbits of the eyes rufo-testaceous; the vertex and cheeks have a long hoary pubescence. Thorax thinly clothed with hoary pubescence, which is most dense on the metathorax; the posterior margin of the scutellum and post-scutellum yellow, sometimes entirely black; the wings hyaline, the nervures pale ferruginous; the legs reddish-yellow, with coxæ, trochanters and base of the femora black; a black spot on the anterior and intermediate tibiæ beneath. Abdomen: the basal segment with a transverse yellow band attenuated in the middle; the following segments have a broad biarcuate band; beneath black; the three intermediate segments have an angular yellow spot at their lateral margins.

The male closely resembles the female, and only differs in having a central longitudinal carina on the second and sixth segments.

Hab. Cape of Good Hope.

29. *BEMBEX FUSCIPENNIS*.

Bembex fuscipennis, *St. Farg. Hym.* iii. 271. 8.

Hab. Cape of Good Hope. (Coll. F. Smith.)

30. *BEMBEX TRICOLOR*.

Bembex tricolor, *Dahlb. Hym. Europ.* i. 180.

Hab. Africa (Cape of Good Hope); Guinea.

31. *BEMBEX VENATOR*.

B.M.

Female. Length 6 lines.—Black: the head and thorax covered with griseous pubescence; the clypeus, a transverse line above, the scape in front, two minute spots in front of the anterior stemma, the labrum and mandibles, yellow; the tips of the latter ferruginous; a bilobed black spot at the base of the clypeus; the flagellum fulvous beneath; the outer orbit of the eyes yellow; a yellow stripe on the tegulæ and another on each side of the thorax before the insertion of the wings; the femora yellow in front towards their apex; the tibiæ and tarsi yellow; the tibiæ have a black stripe outside; the wings hyaline, their nervures ferruginous. Abdomen: all the segments have a narrow biarcuate fascia, the first widely interrupted, the second slightly so, the following continuous; beneath, immaculate.

Hab. Cape of Good Hope.

32. *BEMBEX UNDULATA*.

Bembex undulata, *Spin. Ann. Soc. Ent. Fr.* vii. 468 (1838).

Dahlb. Hym. Europ. i. 487. 3.

Hab. Cape of Good Hope.

33. *BEMBEX GRISESCENS*.

Bembex griseescens, *Dahlb. Hym. Europ.* i. 489. 16.

Hab. Port Natal.

34. *BEMBEX INTERMEDIA*.

Bembex intermedia, *Dahlb. Hym. Europ.* i. 491. 27.

Hab. Port Natal.

35. *BEMBEX NATALIS*.

Bembex natalis, *Dahlb. Hym. Europ.* i. 489. 14.

Hab. Port Natal.

36. *BEMBEX FLAVIFRONS*.

B.M.

Female. Length 8-8½ lines.—Black: the face yellow, a black spot above the insertion of each antenna, and two spots at the base of the clypeus; the labrum and mandibles yellow, the latter black at their tips; the scape in front and the outer orbit of the eyes broadly yellow. The prothorax yellow; the sides of the mesothorax, two abbreviated lines in front, and a transverse spot at its posterior margin, yellow; a spot on each side of the scutellum, a line on the post-scutellum, and an arcuate stripe on the metathorax, yellow; the thorax beneath and the legs yellow; the knees black; the wings hyaline, the nervures testaceous. Abdomen: the basal segment has a biarcuate fascia, narrow in the middle and broadly expanded at the sides, yellow; the second segment has a broad yellow fascia at the base, its posterior margin biarcuate, with two black spots at the basal margin; the three following segments have a narrower biarcuate fascia in the middle; beneath, the two basal segments yellow, the second having a central longitudinal black stripe; the two following segments with a large angular macula on each side.

Var. *α*. The fascia on the basal segment interrupted; beneath, all the segments black at their base, with lateral yellow spots.

Hab. Australia.

37. *BEMBEX FLAVIPES*.

B.M.

Female. Length 5 lines.—Head yellow, the face above the clypeus black; a transverse reddish-yellow line in front of the anterior stemma, which unites with one at the inner orbit of the eyes. Thorax black above and yellow beneath; the prothorax yellow; the mesothorax has a broad stripe on each side, two in the middle, and a transverse abbreviated stripe at its posterior margin; the posterior margin of the scutellum and the post-scutellum yellow; a curved bisinuated yellow stripe on the metathorax behind; the wings hyaline, the tegulæ yellow; a large spot on the breast, a small one on the coxæ and trochanters, and the extreme tips of the femora, black. Abdomen yellow beneath and black above; a bilobed yellow macula at the extreme base of the first segment; segments 1-5 with a glaucous-yellow band on each side, which is deeply sinuated on its anterior margin; the bands on the fifth segment united; the apical segment with a black line in the middle, the sides being ferruginous.

Hab. Australia.

38. *BEMBEX PALMATA*.

Male. Length $7\frac{1}{2}$ lines.—Black: the clypeus, labrum, mandibles and scape yellow; the flagellum yellow beneath; the six basal joints of the flagellum gradually thickened, the seventh and following joints half the thickness of the sixth and serrated beneath; the inner orbit of the eyes with a broad yellow stripe which does not quite extend to the vertex, a yellow stripe in the middle of the face terminating at the anterior stemma. Thorax: the posterior margin of the prothorax, an epaulet over the tegulæ, and a spot on each side of the scutellum, yellow; beneath, a large irregular macula on the sides of the prothorax, a second on the sides of the pectus, and a third on each side of the metathorax, yellow; the legs yellow, the anterior tarsi broadly dilated; wings subhyaline, the nervures ferruginous. Abdomen: segments 1-5 have on each side a pale stripe, which is pointed within, the first and third being the narrowest; beneath, the second segment yellow, with a large stout raised central black carina, the posterior margin of the segment black; the three following segments have a yellow spot on each side.

Hab. Australia? (Coll. F. Smith.)

39. *BEMBEX VARIABILIS*.

B.M.

Female. Length $5-5\frac{1}{2}$ lines.—Black: the head with a griseous pubescence; the antennæ obscurely testaceous beneath; the scape yellow in front; the labrum, clypeus and mandibles yellow;

two black spots at the base of the clypeus, the tips of the mandibles ferruginous; a triangular spot at the base of the clypeus, an abbreviated line at the inner orbit of the eyes, and the outer orbit entirely yellow. Thorax thinly covered with griseous pubescence, most dense on the metathorax; a line on the collar, a spot on the tegulæ in front, a line at their inner margin, and a spot on each side of the scutellum, yellow; the coxæ and femora black, the latter yellow at their apex beneath; the tibiæ and tarsi yellow; the tibiæ and basal joint of the tarsi black behind, the anterior tarsi furnished with long cilia. Abdomen with the first segment clothed with long griseous pubescence; on the following segments it is very short, suberect and griseous; the first segment has a straight interrupted yellow band, segments 2-5 have an interrupted biarcuate yellow band.

Var. α . The basal half of the clypeus black.

Var. β . The antennæ pale testaceous beneath, the apical segment of the abdomen with two yellow spots.

Var. γ . Two abbreviated lines on the mesothorax, a transverse line in the middle of the posterior margin of the mesothorax, a curved line on the scutellum and post-scutellum, and the coxæ and trochanters spotted with yellow; the sides of the thorax with large yellow spots.

Hab. Australia (Hunter River; Port Essington; Swan River).

This species closely resembles *B. furcata*, but it is smaller and black behind, and the abdomen is covered with griseous pubescence. Var. γ . may possibly be a distinct species: a single specimen only has been received from Swan River.

40. BEMBEX RAPTOR.

B.M.

Male. Length $6\frac{1}{2}$ lines.—Black: the face covered with silvery-white pubescence; the anterior margin of the clypeus white; a line on the inner orbit of the eyes, three united spots in front of the anterior stemma, a spot between the antennæ and the scape in front, pale yellow; the outer orbit of the eyes yellow. The prothorax yellow, with an irregular-shaped black spot on each side, and a transverse oblong black spot above; the meso- and metathorax black; the former has two central short stripes in front, an epaulet over the tegulæ, the posterior margin of the scutellum and post-scutellum, yellow; a curved yellow macula on each side of the metathorax, and two oblong spots beneath the wings; the legs yellow, with the coxæ, trochanters and base of the femora black; also a black spot on the anterior and intermediate tibiæ beneath; the wings clear hyaline, the nervures black. Abdomen: all the segments have a broad glaucous-yellow band; that on the basal segment is notched in the middle

of its anterior margin; the four following have their anterior margins notched in the middle and sinuated on each side, their posterior margins straight, with a notch in the middle; the sixth and seventh segments yellow, the latter with a black line in the middle; beneath, the posterior margins of the segments have a yellow fascia which is attenuated in the middle.

Hab. Adelaide.

41. *BEMBEX VESPIFORMIS*.

B.M.

Female. Length 8 lines.—Black: the face covered with silvery-white pubescence, that on the vertex griseous; the scape more or less yellow in front; the flagellum rufo-testaceous beneath; the anterior margin of the clypeus, the labrum, and mandibles at their base, yellow. Thorax: the scutellum and post-scutellum have a pale yellow dot on each side; the metathorax densely clothed with cinereous pubescence; wings subhyaline, the nervures black; the coxæ and femora black, the anterior femora in front and the intermediate and posterior pairs at their apex above, black; the tibiæ and tarsi yellow; the anterior and intermediate tibiæ have a black stripe outside, the posterior pair being black beneath; the basal joints of the anterior tarsi are black outside and furnished with long cilia. Abdomen: a large macula on each side of the basal segment, pointed within, and a small angular macula at the extreme lateral margins of the second segment, both of a pale yellowish-white; the apical segment and apical margin of the fifth segment in the middle, orange-yellow; beneath, entirely yellow.

Male.—Closely resembles the female, but with the scape entirely yellow; the second segment with an elevated carina which has its superior margin black; the apical segment black.

Hab. Adelaide.

42. *BEMBEX ATRIFRONS*.

B.M.

Female. Length 7 lines.—Black: the labrum yellow, with the base, sides and apex more or less black; the outer orbit of the eyes, and a minute spot on the scape in front, yellow. Thorax: a narrow line on the posterior margins of the prothorax and scutellum yellow; a spot on the tegulæ, a line over them and the tubercles, yellow; the legs yellow, the coxæ, trochanters, and base of the femora black; a fusco-ferruginous stripe on the anterior and intermediate tibiæ above, and the anterior tarsi furnished with long ferruginous cilia; the wings hyaline, their nervures ferruginous. Abdomen: the basal segment has on each side a short narrow glaucous stripe, and the

three following segments a narrow biarcuate glaucous stripe, slightly interrupted in the middle; beneath, entirely black.

Hab. Australia (Swan River).

43. *BEMBEX FURCATA*.

B.M.

Bembex furcata, *Erichs. Wieg. Arch.* 1842, p. 266. 240.

Hab. Van Diemen's Land; Australia (Swan River).

Erichson describes the male as having the labrum black, and the clypeus with a yellow macula; a series of examples exhibits every variety, from yellow to black.

44. *BEMBEX LUNATA*.

Bembex lunata, *Fabr. Ent. Syst.* ii. 249. 6; *Syst. Piez.* 224. 10.

Dahlb. Hym. Europ. i. 492. 33.

Hab. Tranquebar.

45. *BEMBEX TREPANDA*.

B.M.

Bembex trepanda, *Dahlb. Hym. Europ.* i. 181.

Hab. India.

46. *BEMBEX SULPHURESCENS*.

B.M.

Bembex sulphurescens, *Dahlb. Hym. Europ.* i. 180.

Hab. India (Madras; The Punjaub).

47. *BEMBEX MELANCHOLICA*.

B.M.

Female. Length $8\frac{1}{2}$ lines.—Head and thorax black; the clypeus, sides of the face, scape in front, labrum, mandibles and outer orbit of the eyes, livid-yellow; the clypeus has two black spots at the base. The posterior margin of the prothorax, a line on each side of the mesothorax, two stripes on the disk, and a transverse one at its posterior margin united to the central stripes, livid-yellow; a transverse curved stripe on the scutellum and post-scutellum, and also the metathorax, livid-yellow; an angular black spot on each side of the metathorax, from which a narrow black line runs obliquely inwards, meeting in the middle of the base; a narrow black line runs from the outer angle of the spot down the sides of the metathorax; the thorax livid-yellow beneath, with a black spot in the middle of the pectus, and one or two smaller ones at the sides; the legs livid-yellow, with a black stripe on the tibiæ and femora behind. Abdomen blue-black; segments 1-5 have a broad livid fascia, the first narrowed in the middle,

the posterior margins of the others biarcuate; the second and third have on each side a transverse black spot; the fourth and fifth have their anterior margins bisinuated; beneath, the posterior margin of the first segment, and a spot on each side of the following segments, livid-yellow; the abdomen covered above with short thin black pubescence.

The male only differs in having the middle of the basal margin of the first segment of the abdomen beneath, produced into an obtuse tubercle.

Hab. Sumatra.

48. *BEMBEX CILIATA*.

B.M.

Bembex ciliata, *Fabr. Syst. Piez.* p. 226. 21.

Dahlb. Hym. Europ. i. 488. 11.

St. Farg. Hym. Europ. i. 279. 14.

Hab. Brazil (Para; Santarem; Tapajos).

49. *BEMBEX GRATIOSA*.

B.M.

Female. Length 6 lines.—Head black; the inner orbit of the eyes, the clypeus, scape in front, labrum and mandibles, of a glaucous-yellow; tips of the mandibles ferruginous; the flagellum fulvous beneath and fuscous above, the basal joint black; a glaucous spot in front of the anterior stemma. Thorax black above and of a livid-yellow beneath; the prothorax, lateral margins of the mesothorax, two stripes on the disk dilated anteriorly and recurved posteriorly and united, the hinder margin of the scutellum, the post-scutellum, a curved stripe on the metathorax and its lateral angles, pale yellow; the legs yellow, in some examples with a narrow black line on the femora above; the wings clear hyaline, the nervures pale ferruginous. Abdomen pale yellow; the extreme base black, and a curved spot on the basal segment above; a broad black band on the basal margin of the second segment, which is suddenly narrowed at the sides; the apical margin has a narrow black band, which is widest and acute in the middle; the following segments are similarly banded, but the bands are narrower; the apical segment has a sharp tooth on each side, and the apex is deeply notched.

The male differs in having a transverse raised carina on the second segment of the abdomen beneath, which is terminated at each end by a minute acute tooth; the apical segment has a tooth on each side and a deep notch at the apex, as in the other sex.

Hab. Brazil (Tapajos).

50. BEMBEX PLACIDA.

Male. Length 5-6 lines.—Black: the scape in front, clypeus, labrum and mandibles, yellow; the base of the clypeus and orbits of the eyes pale testaceous; the face thinly covered with yellowish pubescence. Thorax: the posterior margin of the prothorax, the lateral margins of the mesothorax, two stripes on the disk, the hinder margin of the scutellum, the post-scutellum, a curved line on the metathorax, and its lateral angles, yellow; beneath, yellow; the pectus black; also a black stripe beneath the wings; a black spot on the trochanters beneath, another at the extreme base of the femora and tibiæ; a narrow black stripe at the apex of the femora above, and a line on the posterior tibiæ within; the claws ferruginous; the wings hyaline, the nervures black; a yellow spot on the tegulæ in front. Abdomen: the basal segment has a slightly interrupted yellow fascia, the second segment a broad interrupted fascia on each side enclosing a black dot; the three following segments have on each side a curved stripe; the sixth segment has a slightly interrupted straight fascia, the apical segment being yellow at its apex; beneath yellow, with a central row of black spots, the second segment having on each side at its base a small oblique black spot; the sixth segment with a minute acute spine in the centre.

Hab. Columbia. (Coll. W. W. Saunders, Esq.)

51. BEMBEX AMERICANA.

Bembex Americana, *Fabr. Ent. Syst.* ii. 250. 9; *Syst. Piez.* 225. 13.

Dahlb. Hym. Europ. i. 183.

Hab. South America.

52. BEMBEX BRULLEI.

Bembex Brullei, *Guér. Voy. Cog. Zool.* pt. 2. p. 263, *Atlas*, t. 9. f. 3.

Spin. Gay's Chili, vi. 318. 1.

Hab. Chili.

53. BEMBEX SULPHUREA.

Bembex sulphurea, *Spin. Gay's Chili*, vi. 319. 2.

Hab. Chili.

54. BEMBEX VENTRALIS.

Bembex ventralis, *Dahlb. Hym. Europ.* i. 180.

St. Farg. Hym. iii. 278. 13.

Hab. Chili; Valparaiso. (Coll. F. Smith.)

55. *BEMBEX FASCIATA.*

B.M.

Bembex fasciata, *Fabr. Syst. Piez.* p. 224. 6.*Say, Bost. Journ.* i. 367. 2.*Dahlb. Hym. Europ.* i. 184.*Bembex Spinolæ*, *St. Farg. Hym.* iii. 277. 12.*Hab.* N. America (St. John's Bluff, East Florida).56. *BEMBEX LONGIROSTRA.**Bembex longirostra*, *Say, Bost. Journ.* i. 366. 1.*Hab.* Mexico.57. *BEMBEX MONODONTA.*

B.M.

Bembex monodonta, *Say, Narr. Exped. St. Peter's River, Append.* 69.*Hab.* Pennsylvania.58. *BEMBEX INSCRIPTA.**Bembex inscripta*, *Dahlb. Hym. Europ.* i. 183.*Hab.* — ?59. *BEMBEX AFFINIS.**Bembex affinis*, *Dahlb. Hym. Europ.* i. 182.*Hab.* — ?Genus 2. *MONEDULA.**Vespa*, *pt.*, *Linn. Syst. Nat.* i. 574. ed. 10 (1758).*Apis*, *pt.*, *De Geer, Ins.* iii. 507 (1773).*Bembex*, *pt.*, *Fabr. Ent. Syst.* ii. 247 (1793).*Monedula*, *Latr. Gen. Crust. et Ins.* iv. 99 (1809).*Stictia*, *Illig. ed. Rossi, Faun. Etrus.* (1807).1. *MONEDULA SIGNATA.*

B.M.

Vespa signata, *Linn. Syst. Nat.* i. 574. 14. ed. 10 (1758); *Syst. Nat.* i. 952. 24. ed. 12.*Apis vespiformis*, *De Geer, Ins.* iii. 570. 2. t. 28. f. 3.*Bembex signata*, *Fabr. Syst. Ent.* p. 361. 2; *Syst. Piez.* 223. 3.*Oliv. Encycl. Méth.* iv. 290. 2.*Monedula signata*, *Latr. Gen. Cr. et Ins.* iv. 100.*St. Farg. & Serv. Encycl. Méth.* x. 498. 1.*St. Farg. Hym.* iii. 283. 2.*Dahlb. Hym. Europ.* i. 185. 3.

Stictia signata, Illig. ed. Rossi, *Faun. Etrus.* 2nd ed.
Ericks. Faun. und Flora Brit. Guiana, iii. 589?
Hab. South America; Brazil.

2. *MONEDULA SURINAMENSIS.*

B.M.

Apis Surinamensis, De Geer, *Ins.* iii. 569. 1. t. 28. f. 1.
Bembex continua, Fabr. *Syst. Piez.* 225. 15.
Monedula continua, Latr. *Gen. Cr. et Ins.* iv. 100.
St. Farg. & Serv. Encycl. Méth. x. 498.
St. Farg. Hym. iii. 287. 5.
Monedula Surinamensis, Dahlb. *Hym. Europ.* i. 187. 6.
Hab. South America; Brazil; St. Domingo.

3. *MONEDULA PUNCTATA.*

B.M.

Bembyx punctata, Fabr. *Syst. Ent.* p. 361. 2 ♀.
Bembex punctata, Fabr. *Ent. Syst.* ii. 248. 2; *Syst. Piez.* 223. 3.
Monedula punctata, St. Farg. & Serv. *Encycl. Méth.* x. 498.
St. Farg. Hym. iii. 284. 3.
Dahlb. Hym. Europ. i. 184. 1.
Bembex maculata, Fabr. *Syst. Piez.* 222. 2 ♂ (var.).
Stictia signata et maculata, Ericks. *Faun. und Fl. Brit. Guiana*,
 iii. 589.
Hab. S. America; Demerara; Brazil. (Coll. W. W. Saunders, Esq.)

Var. β. The yellow markings on the thorax twice as broad as in the majority of specimens; the central spots of the abdomen enlarged and united to the lateral ones; the legs more broadly striped with yellow.

4. *MONEDULA SPINOSA.*

B.M.

Bembex spinosa, Fabr. *Ent. Syst. Supp.* 260. 9; *Syst. Piez.* 225. 14.
Monedula spinosa, Dahlb. *Hym. Europ.* i. 494.
Hab. South America.

5. *MONEDULA FUSCIPENNIS.*

B.M.

Monedula fuscipennis, St. Farg. *Hym.* iii. 286. 4.
Monedula Zetterstedti, Dahlb. *Hym. Europ.* i. 493.
Hab. Brazil.

6. *MONEDULA MAGNIFICA.*

B.M.

Monedula magnifica, Perty, *Del. An. Art.* p. 144. t. 28. f. 3.
Hab. Brazil.

7. *MONEDULA SIMILLIMA*.

B.M.

Male. Length 7 lines.—Black : a pale testaceous line on each side of the face ; a line at the base of the scape in front, and a transverse one at the base of the labrum, yellow. Thorax : a stripe on the post-scutellum, a curved line beneath, and the posterior angles of the metathorax, yellow ; wings smoky-hyaline ; the anterior and intermediate tibiæ in front, the first joint of the tarsi in front, yellow ; the claw-joint of the anterior tarsi pale testaceous, the claws black ; the apex of the posterior tibiæ on the outer side, and also the base of the first joint of the tarsi outside, yellow. Abdomen : the five basal segments have on each side a large subovate macula, pointed within ; the sixth and seventh segments black, the margins of the apical segment not toothed ; beneath black, the second segment having in the middle a minute acute tooth.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

This species in appearance resembles *M. heros*, from which it differs not only in the colouring of the head and legs, but in having the apical segment simple : in *M. heros* it is armed on each side with a stout acute tooth.

8. *MONEDULA INSULARIS*.

Monedula insularis, *Dahlb. Hym. Europ.* i. 186. 4.

Hab. West Indies (St. Thomas).

9. *MONEDULA DISSECTA*.

B.M.

Monedula dissecta, *Dahlb. Hym. Europ.* i. 186. 5.

Hab. Demerara.

10. *MONEDULA PERUVIANA*.

B.M.

Bembex peruviana, *Guér. Icon. Règ. Anim.* iii. 437 ♂.

Monedula peruviana, *Guér. Icon. Règ. Anim.* ii. pl. 70. f. 6 ♂.

Monedula Orbignyi, *Guér. Icon. Règ. Anim.* iii. 437 ♀.

Bembex Chilensis, *Dahlb. Hym. Europ.* i. 184.

Hab. Peru ; Chili.

11. *MONEDULA CHILENSIS*.

Monedula Chiliensis, *Spin. Gay's Chili*, vi. 314.

Hab. Chili.

12. *MONEDULA ANGULATA*.

B.M.

Female. Length 6 lines.—Head black; the face and cheeks with a silvery pubescence; a spot on the scape in front, the anterior margin of the clypeus, the labrum and mandibles, yellow; the tips of the mandibles black; the clypeus, sides of the face, orbits of the eyes, a minute spot in front of the anterior stemma, and the antennæ, reddish-yellow; four or five of the apical joints of the flagellum black. Thorax black; the posterior margin of the prothorax, two abbreviated lines on the mesothorax anteriorly, a line on each side passing over the tegulæ, a transverse interrupted line at the base of the scutellum, the post-scutellum, an arcuate line on the metathorax and the posterior angles, yellow; the metathorax emarginate its entire width, the lateral angles acute and slightly produced; the prothorax variegated with yellow beneath, the mesothorax with an irregular yellow stripe beneath the wings; the legs reddish-yellow, striped or spotted with yellow beneath; wings hyaline, sometimes faintly smoky. Abdomen yellow, with a large angular black spot at the base; the basal and apical margins of the segments have a narrow black band, two or three of the apical bands rufo-fuscous; beneath yellow, with a ferruginous stain in the middle.

Male.—This sex only differs in being brighter coloured, and in having a stout acute tooth, curved backwards, on the second abdominal segment beneath.

Hab. Brazil (Para; Santarem).

This species, although much smaller than *M. Surinamensis*, very strongly resembles it: the acute posterior angles of the metathorax in both sexes, and the tooth on the abdomen beneath, of the male, at once separate them.

13. *MONEDULA SERICEA*.

Monedula sericea, *Spin. Gay's Chili*, vi. 315. 2.

Hab. Chili.

14. *MONEDULA MONTEZUMA*.

B.M.

Female. Length 7–8 lines.—Head black; the clypeus, sides of the face, orbits of the eyes, an angulated line in front of the anterior stemma, the scape in front, labrum and mandibles, yellow; the latter black at their tips. Thorax black; the posterior margin of the prothorax, the tubercles, an irregular stripe beneath the wings, two abbreviated lines in the middle of the disk of the mesothorax, a central spot on its posterior margin, a spot on each side of the scutellum, the post-scutellum, and a curved line

on the metathorax, yellow; legs yellow, with a black spot on the trochanters and femora beneath; also a black stripe at the base of the femora above; wings subhyaline, the nervures ferruginous. Abdomen yellow, the margins of the segments ferruginous; the first segment has the base and a central pointed spot uniting with it, black, an oblique line on each side black; the second segment has a central saddle-shaped spot, and the following segments two central black dots; the apical segment has in addition a central elongate-acute angular spot.

The male closely resembles the female, but the spots on the abdomen are seldom united; the abdomen is yellow beneath, the second segment having a central longitudinal black stripe, and also a central minute acute tooth at its apical margin.

Hab. Mexico.

This is a species which varies in the markings of the abdomen; the black spots sometimes unite with the black basal margin of the segments; in some examples they are all separated, particularly in specimens of the males.

15. *MONEDULA CAROLINA.*

B.M.

Bembex Carolina, *Fabr. Ent. Syst.* ii. 249. 7; *Syst. Piez.* 224. 11.

Coqueb. Illustr. Icon. Ins. dec. 1. t. 6. f. 2 ♀.

Monedula Carolina, *Latr. Gen. Crust. et Ins.* iv. 100.

St. Farg. Hym. iii. 281. 1. t. 28. f. 4.

Dahlb. Hym. Europ. i. 185. 2.

Hab. North America; East Florida; Carolina.

16. *MONEDULA 4-FASCIATA.*

B.M.

Monedula 4-fasciata, *Say, Narr. Exped. St. Peter's River, Append.* 70. 1.

Monedula Sallei, *Guér. Icon. Règ. Anim.* iii. 437?

Hab. Pennsylvania; N. Carolina.

17. *MONEDULA VENTRALIS.*

Monedula ventralis, *Say, Narr. Exped. St. Peter's River, Append.* 70. 2.

Hab. Pennsylvania.

18. *MONEDULA PICTIFRONS.*

B.M.

Female. Length 6 lines.—Head black; the clypeus, face on each side, a triangular spot enclosing the anterior stemma, a central line uniting with it and running to the base of the cly-

peus, the outer orbit of the eyes, a narrow line on the posterior margin of the vertex, the antennæ, labrum and mandibles, yellow; tips of the mandibles black. Thorax black; the prothorax, two abbreviated central stripes on the mesothorax in front, a line passing over the tegulæ which unites with a line on the posterior margin of the scutellum, the post-scutellum, and a curved line on the metathorax, yellow; a large macula at the posterior angles of the metathorax, and a large irregular-shaped spot beneath the wings, yellow; the legs yellow, with a black stripe at the base of the femora above; wings hyaline, the nervures fuscous. Abdomen yellow; the basal margins of the segments black, each with a central bilobed black spot; beneath, the basal margins of the segments have a bilobed black fascia; the apical segment black, with a heart-shaped yellow spot at the apex.

Hab. North Carolina.

Fam. 6. NYSSONIDÆ.

Mandibles not emarginate beneath; the intermediate tibiae with two spines at their apex. Abdomen resembling the *Larridæ*.

Genus 1. STIZUS.

Sphex, pt., *Drury, Exot. Ins.* ii. 71 (1773).

Vespa, pt., *Fabr. Ent. Syst.* ii. 254 (1793).

Stizus, *Latr. Gen. Crust. et Ins.* iv. 100 (1804).

Sphecius, *Dahlb. Hym. Europ.* i. 154 (1843).

Hogardia, *St. Farg. Hym.* iii. 288 (1845).

1. STIZUS SPECIOSUS.

B.M.

Sphex speciosus, *Drury, Exot. Ins.* ii. 71. t. 38. f. 1 ♀.

Vespa tricineta, *Fabr. Ent. Syst.* ii. 254. 5; *Syst. Piez.* 254. 5.

and *Mus. Dom. Banks. Cab. Linn. Soc.*

Stizus speciosus, *St. Farg. & Serv. Enc. Méth.* x. 496. l. t. 382. f. 6.

Sphecius speciosus, *Dahlb. Hym. Europ.* i. 154.

Hogardia speciosa, *St. Farg. Hym.* iii. 290. 2.

Hab. North America.

2. STIZUS HOGARDII. Pl. VIII. fig. 4.

B.M.

Stizus Hogardii, *Latr. Gen. Crust. et Ins.* iv. 100. t. 13. f. 12 ♀.

St. Farg. & Serv. Encycl. Méth. x. 496.

Hogardia rufescens, *St. Farg. Hym.* iii. 289. l. t. 28. f. 5.

Hab. St. Domingo; Jamaica.

3. *STIZUS NIGRICORNIS*.

B.M.

Stizus nigricornis, *Dufour, Ann. Soc. Ent. Fr.* vii. 271. 2. t. 9. f. 2 (1838).

Sphæcius nigricornis, *Dahlb. Hym. Europ.* i. 480. 1.

Lucas, Explo. Sc. Algér. iii. 266.

Larra syriaca, *Klug, Symb. Phys.* dec. v. t. 46. f. 6.

Hab. Albania; South of France.

Specimens of this species from Albania differ from those received from the South of France in having the antennæ of the females more or less ferruginous; the specimens are also larger: in other respects they agree with French examples.

4. *STIZUS PECTORALIS*.

B.M.

Female. Length 12 lines.—Ferruginous: the face covered with silvery-white pubescence, which is short and very dense on each side of the clypeus; the apical half of the mandibles black. Thorax black beneath; the metathorax black, as well as the coxæ and femora, the latter ferruginous at their apex; the disk of the thorax has a short ferruginous pubescence; the wings hyaline, yellowish towards their base. Abdomen entirely ferruginous, shining and finely punctured; the apical segment strongly punctured above.

Hab. Australia.

Genus 2. *LARRA*.

Sphex, pt., *Fabr. Syst. Ent.* p. 348 (1775).

Crabro, pt., *Fabr. Syst. Ent.* p. 373 (1775).

Tiphia, pt., *Fabr. Mant.* i. 278 (1787).

Vespa, pt., *Vill. Ent.* iii. 278 (1789).

Bembex, pt., *Fabr. Ent. Syst.* ii. 251 (1793).

Mellinus, pt., *Panz. Faun. Germ.* 73. 19 (1795).

Scolia, pt., *Fabr. Syst. Piez.* p. 242 (1804).

Larra, *Klug, Symb. Phys.* dec. v. (1829).

Bicyrtes, *St. Farg. Hym.* iii. 53 (1845).

The insects included in this genus have been usually placed in that of *Stizus*; but the type of the latter is the *Stizus Hogardii* of Latreille, generically distinct from the insects of the present genus, the type of which is the *Larra vespiformis*.

1. *LARRA ABDOMINALIS*.

Stizus abdominalis, *Dahlb. Hym. Europ.* i. 478.

Hab. Egypt.

2. LARRA ÆGYPTIA.

Stizus ægyptius, *St. Farg. Hym.* iii. 300. 9.

Hab. Egypt.

3. LARRA CAFFER.

B.M.

Stizus caffer, *Sauss. Mém. Soc. Phys. Genève*, xiv. 28. 15. t. f. 9.

Female. Length $6\frac{1}{2}$ lines.—The head, thorax and legs ferruginous; the disk of the mesothorax and the metathorax black; the lateral margins broadly ferruginous; the margins crenulated, the breast fuscous; the wings slightly fuscous, the nervures ferruginous. Abdomen shining, finely and closely punctured, and having a violet iridescence; the four basal segments having on each side a large yellow macula, the fifth and sixth segments ferruginous; beneath, ferruginous.

Hab. Port Natal.

This species closely resembles *L. fuscipennis*, but it differs in not having the basal joints of the flagellum slender.

4. LARRA AMENA.

Female. Length 5–6 lines.—Black: the mandibles, clypeus, scape, and five basal joints of the flagellum, ferruginous; the following joints fuscous; the extreme apex ferruginous. Thorax strongly and very closely punctured; the tegulæ and legs ferruginous; the coxæ and trochanters black; the wings reddish-brown, their base hyaline. Abdomen smooth, shining, and very delicately and closely punctured; the basal segment ferruginous, its extreme base, as well as its apical margin, black; the three apical segments pale ferruginous; the apical margins of the second and third segments obscurely rufo-testaceous; beneath, the basal segment has a central longitudinal carina; the three apical segments pale ferruginous.

Hab. West Africa. (Coll. F. Smith.)

5. LARRA ANNULATA.

Larra annulata, *Klug, Symb. Phys. dec. v. t. 46. f. 7 ♂*.

Hab. Syria.

6. LARRA ANTENNATA.

Larra antennata, *Klug, Symb. Phys. dec. v. t. 46. f. 5 ♂*.

Hab. Syria.

7. *LARRA APICALIS*.

Stizus apicalis, Guér. *Icon. Règ. Anim.* iii. 437 ♀.

Male. Length 9 lines.—Ferruginous: the scape in front, the apical joint of the flagellum, the labrum, clypeus, the face above as high as the insertion of the antennæ, the sides, and two spots before the posterior stemmata, yellow; the mesothorax fuscous; the post-scutellum and a curved line on the metathorax yellow; the wings and abdomen as in the other sex.

Hab. Senegal. (Coll. F. Smith.)

8. *LARRA ARGENTIFRONS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: the palpi, labrum, clypeus, and antennæ beneath, yellow; the face densely covered with silvery pubescence; the apical joint of the antennæ terminating in a sharp hook or spine; the eleventh joint has also a bent spine at the apex within; the fourth joint has also a short tooth beneath. Thorax: the tubercles, tegulæ and an epaulet over them, a stripe at the sides of the scutellum, a transverse line on the post-scutellum and the legs, yellow; the coxæ, except their tips, the trochanters, and the femora more or less at their base, black; the wings hyaline and iridescent, the nervures testaceous. Abdomen: the apical margins of the segments with a bisinuated yellow band; beneath, the second and three following segments have on each side an angular yellow macula.

Hab. Port Natal.

This species very closely resembles *Larra tridens* of Fabricius, of which, indeed, it may possibly be an extreme variety.

9. *LARRA ATROX*.

B.M.

Female. Length 11 lines.—Black: the labrum, clypeus, and a spot above, the sides of the face and outer orbit of the eyes, yellow; the flagellum ferruginous; the posterior margin of the prothorax, an epaulet over the tegulæ, and the posterior margin of the latter, ferruginous; the anterior and intermediate tibiæ and tarsi ferruginous; the tips of the femora and the apex of the tibiæ within, ferruginous; the wings dark fuscous, with a violet iridescence. Abdomen shining and very delicately punctured; at the extreme apex a little fulvous pubescence.

Hab. South Africa.

10. *LARRA BASALIS*.

Stizus basalis, Guér. *Icon. Règn. Anim.* iii. 438.

Hab. Senegal.

11. LARRA BIPUNCTATA.

B.M.

Female. Length 7 lines.—Black: the mandibles, labrum, clypeus and a spot above, the face on each side nearly as high as the anterior stemma, the scape in front, and the outer orbit of the eyes, pale yellow; the flagellum fulvous; a black spot at the base of the clypeus, and the tips of the mandibles black; the head covered with a thin white pubescence. Thorax: the posterior margin of the prothorax, the tubercles, an epaulet over the tegulæ, two large ovate spots on the scutellum, and a curved stripe on the metathorax, pale yellow; the wings hyaline, their nervures ferruginous; the legs reddish-yellow, the coxæ and trochanters black. Abdomen: the basal segment has a pale yellow band, which is notched or slightly interrupted in the middle; the second and three following segments have a broad waved band, slightly interrupted in the middle; beneath, the second and following segments have on each side an angular yellow macula.

The males have all the bands interrupted, and have the metathorax immaculate.

Hab. Albania (Yanina).

12. LARRA BIZONATA.

B.M.

Stizus bizonatus, *Spin. Ann. Soc. Ent. Fr.* vii. 473. 24 (1838) ♂ ♀; fig. *Expéd. Egypt.* t. 16. f. 13 ♀.

Guér. Icon. Règn. Anim. iii. 439.

Klug, Symb. Phys. dec. v. t. 46. f. 10 (*sphegiformis*).

St. Farg. Hym. iii. 302. 11.

Hab. Egypt.

13. LARRA BLANDINA.

B.M.

Female. Length 9 lines.—Black: closely punctured; the tibiæ and tarsi have a fine short silvery pile; the wings dark brown, with a violet iridescence; the tips of the anterior wings and the base of the posterior pair milky-white. The abdomen red, with the base black.

Male rather smaller, but closely resembling the female; the face densely clothed with bright silvery pile; the metathorax covered with silvery-white pubescence; the base of the abdomen has a little white pubescence; that on the rest of the abdomen is short and bright fulvous.

Hab. India.

14. LARRA CINGULATA.

Female. Length 4 lines.—Black: the scape in front, the

inner orbit of the eyes as high as the anterior stemma, the sides of the clypeus and labrum, as well as the palpi, yellow; the flagellum pale testaceous beneath. Thorax: the posterior margin of the prothorax, a minute spot at the posterior angles of the mesothorax and the post-scutellum, yellow; the metathorax emarginate its entire width, the posterior angles produced, forming acute teeth, which are yellow; the wings hyaline, the nervures black; the anterior tibiæ and tarsi yellow in front, the claw-joint entirely so. The apical margins of all the segments of the abdomen have a narrow yellow fascia, which is continued beneath; the apical segment has an angular spot on each side above.

Hab. Brazil. (Coll. W. W. Saunders, Esq.)

15. *LARRA CINGULIGERA*.

B.M.

Female. Length $5\frac{1}{4}$ lines.—Black: the scape in front and the clypeus yellow, the latter covered with bright silvery pile; the flagellum beneath, except two or three of the basal joints, fulvous. Thorax: the posterior margin of the prothorax and the tubercles yellowish-white; the tegulæ and legs ferruginous; the coxæ and anterior femora beneath fuscous; the wings hyaline, the nervures fuscous. Abdomen: the first and three following segments have towards their apical margins an uninterrupted yellowish-white band; the apical margins of the segments, beneath, have a yellowish-white bisinuated fascia.

Hab. Interior of South Africa.

16. *LARRA CITRINA*.

Larra citrina, *Klug, Symb. Phys. dec. v. t. 46. f. 4 ♀*.

Hab. Egypt.

17. *LARRA COMBUSTA*.

B.M.

Female. Length 8-9 lines.—Head black; a narrow line at the outer orbit of the eyes, the face below the anterior stemma, the clypeus, mandibles and antennæ, ferruginous; the tips of the mandibles black; the apical joints of the flagellum fuscous above. Thorax black; the prothorax, sides of the mesothorax, the scutellum, the tegulæ and legs, ferruginous; the posterior legs more or less fuscous; wings dark brown, with a violet iridescence. Abdomen fusco-ferruginous, shining, and closely and finely punctured; beneath, clear red at the base.

Hab. Asia Minor (Trebizond).

18. LARRA CONICA.

Stizus conicus, *Germar, Reise nach Dalm.* p. 262. 358.

Van d. Lind, Obs. ii. 16. 3.

Dahlb. Hym. Europ. i. 152. 87.

Hab. Dalmatia (Spalatro).

19. LARRA DELESSERTII.

Stizus Delessertii, *Guér. Icon. Règ. Anim.* iii. 439.

Hab. India (Pondicherry).

20. LARRA DICHROA.

Larra dichroa, *Klug, Symb. Phys. dec. v. t. 46. f. 9 ♂.*

Hab. Egypt.

21. LARRA ELEGANS.

Stizus elegans, *Dahlb. Hym. Europ.* i. 478.

Hab. Egypt.

22. LARRA FASCIATA.

B.M.

Larra fasciata, *Fabr. Ent. Syst. Supp.* 253. 7-8; *Syst. Piez.* 221. 13.

Klug, Symb. Phys. dec. v. t. 46. f. 14 ?

Stizus fasciatus, *Dahlb. Hym. Europ.* i. 153.

Hab. Tranquebar; Northern India; Ethiopia (Ambukohl).

23. LARRA FENESTRATA.

B.M.

Male. Length 8 lines.—Black: the face covered with short cinereous pubescence; a slightly raised carina passes from the base of the clypeus between the antennæ, not extending to the anterior stemma. The metathorax covered with cinereous pubescence; the wings black, hyaline at their base, and the extreme apex of the superior pair hyaline. Abdomen shining, finely punctured, and covered with a cinereous pilosity.

Hab. Congo.

24. LARRA FERRUGINEA.

Male. Length 8 lines.—Ferruginous: the clypeus, labrum, mandibles, scape in front, and outer orbit of the eyes, yellow. The posterior margin of the prothorax and the tubercles yellow; the mesothorax and a transverse stripe beneath the post-scutellum black; the wings fulvo-hyaline, the nervures ferruginous; a dark fuscous cloud occupies the marginal cell. Abdomen: the

third segment has on each side an arcuate yellow stripe; the fourth and fifth segments have an interrupted yellow fascia; the sixth an entire yellow fascia; beneath, the third and three following segments have their apical margins yellow. The head and thorax have a thin cinereous pubescence; the abdomen has a short yellow pubescence.

Hab. The Gambia. (Coll. F. Smith.)

25. *LARRA FLAVIPES.*

Female. Length $4\frac{1}{2}$ lines.—Black: the antennæ in front, the clypeus, labrum and mandibles, yellow. Thorax: the anterior and posterior margins of the prothorax, the tubercles, a spot beneath the wings, the tegulæ and an epaulet over them, a spot on each side of the scutellum, the post-scutellum, the lateral posterior angles of the metathorax, and the legs, yellow; the metathorax truncated and hollowed out behind; the wings hyaline, their nervures ferruginous. Abdomen: the basal segment has on each side a large angular yellow spot, the two uniting in the middle of the segment; the four following segments have a bisinuated fascia on their apical margins; the sixth segment ferruginous at its apex.

Hab. The Gambia. (Coll. F. Smith.)

26. *LARRA DUBIA.*

Male. Length 4 lines.—Black: the clypeus and an angular spot above, the labrum, palpi, a spot on the mandibles and the antennæ beneath, yellow; the clypeus covered with silvery pubescence. Thorax: the posterior margin of the prothorax, the tubercles, a spot beneath the wings, the tegulæ and an epaulet over them, a spot on each side of the scutellum, the post-scutellum, and the lateral margins of the metathorax, yellow; the angles of the latter acute; the anterior and intermediate legs yellow, with a black stripe on the femora and tibiæ behind; the tarsi have a dark stain behind; the posterior legs black, a yellow stripe on the femora above at their base; the knees, and a stripe on the tibiæ at their apex beneath, yellow; the coxæ and trochanters black; wings subhyaline, the second submarginal cell *petiolated*. Abdomen: the basal segment with a broad yellow band on its apical margin sinuated in the middle; the other segments have a bisinuated fascia, the two apical segments yellow; beneath, the second and following segments with a narrow yellow fascia on their apical margins; the abdomen is thinly covered with short pale pubescence.

Hab. Brazil (Villa Nova).

This species, having the second submarginal cell petiolated, would, by a rigorous adherence to the wing-system, be excluded from the genus *Larra*; but an examination of a large number shows that in all the smaller species the second submarginal cell has a tendency to become narrowed towards the marginal: in *L. tridentata* the nervures frequently unite at their junction with the marginal cell, and are sometimes even distinctly petiolated; under these circumstances the present species is retained in the genus.

27. *LARRA FULIGINOSA*.

B.M.

Larra fuliginosa, *Klug, Symb. Phys. dec. v. t. 46. f. 11 ♂*.

Hab. Egypt; Gambia.

28. *LARRA FUSCIPENNIS*.

B.M.

Female. Length 7-9 lines.—Black: the head ferruginous, with a fuscous stain above the insertion of each antenna, the stain sometimes nearly obsolete; the labrum, mandibles and clypeus usually more or less yellow; the antennæ ferruginous; the flagellum very slender at the base. The prothorax, tubercles, sides of the mesothorax, tegulæ, scutellum and legs, ferruginous; in some examples, a large ferruginous spot beneath the wings; the head and thorax have a thin griseous pubescence, most dense on the metathorax; the wings fuscous, their apical margins pale, the nervures ferruginous. Abdomen delicately punctured, shining, and having a violet iridescence, thinly covered with cinereous pubescence, which is most dense on the basal segment; the second and third segments have on each side a large yellow macula; the two apical segments ferruginous; beneath, the two basal and apical segments ferruginous.

Male.—This sex only differs in having the apex of the abdomen less red.

Hab. Port Natal.

29. *LARRA GRANDIS*.

B.M.

Stizus grandis, *St. Farg. Hym. iii. 293. 2.*

Lucas, Explo. Sc. Algér. iii. 263. t. 13. f. 8.

Hab. Algeria.

30. *LARRA HIRTULA*.

B.M.

Male. Length 3½ lines.—Black: the labrum, clypeus, and scape in front, white; a black spot in the centre of the clypeus; the flagellum fulvous beneath. Thorax: the posterior margin

of the prothorax, the tubercles, tegulæ and legs, ferruginous; the coxæ, trochanters and femora at their base black; the wings hyaline, their nervures black; the metathorax truncated. Abdomen: the basal segment has a transverse yellow fascia towards its apical margin, the edge of the fascia bordered with ferruginous; the third segment has a ferruginous band on its apical margin; the margins of the other segments have a yellow fascia more or less suffused with ferruginous colouring; the insect covered with suberect cinereous pubescence.

Hab. Adelaide.

31. LARRA INFUSCATA.

Larra infuscata, *Klug, Symb. Phys. dec. v. t. 46. f. 11 ♂*.

Hab. Ethiopia (Ambukohl).

32. LARRA INTEGER.

B.M.

Bembex integer, *Fabr. Ent. Syst. ii. 251. 12; Syst. Piez. 226. 18.*

Stizus integer, *Spin. Ins. Lig. i. 74. 1.*

Van d. Lind, Obs. ii. 15. 2.

Dahlb. Hym. Europ. i. 152. 86.

Hab. France; Italy; Germany; Spain; Albania.

33. LARRA KLUGII.

Larra apicalis, *Klug, Symb. Phys. dec. v. t. 46. f. 13 ♂ (nec. Guér.).*

Hab. Egypt.

34. LARRA LEPIDA.

Larra lepida, *Klug, Symb. Phys. dec. v. t. 46. f. 1 ♂*.

Hab. Egypt.

35. LARRA LORICULATA.

Male. Length 7-8 lines.—Black: the scape in front, the face below the insertion of the antennæ, a narrow transverse line in front of the stemmata, and another running down the face to the base of the clypeus, the latter, and also the labrum, yellow; the outer orbit of the eyes reddish-yellow; the mandibles and antennæ ferruginous. Thorax: the posterior margin of the prothorax and tubercles, as well as the post-scutellum, yellow; a large macula on each side of the scutellum; the lateral posterior angles of the metathorax and the legs fulvous; the coxæ and trochanters black; the metathorax truncate, the margins of the truncation denticulate, the teeth ferruginous; the wings fulvo-hyaline, the

nervures ferruginous. Abdomen: each segment has a large bell-shaped macula in the centre, on each side of which is a large oblong macula, giving the abdomen the appearance of a coat of mail; beneath, the apical margins of the segments fulvous.

Hab. The Gambia. (Coll. F. Smith.)

36. LARRA MELANOPTERA.

Stizus melanopterus, *Dahlb. Hym. Europ.* i. 478.

Hab. Rhodes.

37. LARRA MELANOXANTHA.

Male. Length 6 lines.—Yellow: the flagellum fulvous; the vertex black; the apical joints of the antennæ fuscous above; the tips of the mandibles rufo-piceous. The mesothorax, the post-scutellum, and two oblique lines on the metathorax uniting at its apex, black; the wings hyaline, the marginal cell occupied by a fuscous cloud. The extreme base of the abdomen black, the black colouring produced in the middle into an angular spot which extends down half the length of the segment; the apical margins of the first and three following segments black, and an angular black spot in the middle of their base; the apical segment ferruginous.

Hab. India. (Coll. W. W. Saunders, Esq.)

38. LARRA MELLEA.

Female. Length 5 lines.—Honey-yellow: the flagellum and vertex pale ferruginous; three longitudinal ferruginous stripes on the mesothorax, and the margins of the scutellum and post-scutellum ferruginous; the legs in some individuals with ferruginous stains; the wings fulvo-hyaline, a fuscous cloud occupying the marginal cell, the nervures ferruginous; the basal and apical margins of the segments of the abdomen narrowly ferruginous.

Hab. India. (Coll. W. W. Saunders, Esq.)

39. LARRA MIONII.

Stizus Mionii, *Guér. Icon. Règ. Anim.* iii. 438.

Hab. Senegal.

40. LARRA MONEDULOIDES.

B.M.

Female. Length 3 lines.—Black: the margins of the clypeus, the labrum, palpi, and antennæ beneath, pale yellow; the fla-

gellum somewhat fulvous beneath; the face has a short silvery pubescence. Thorax: the posterior margin of the prothorax, the tubercles, a spot on the tegulæ in front, another at the posterior lateral angles of the mesothorax, a stripe on each side of the scutellum, the post-scutellum, and the lateral angles of the metathorax, yellow; the anterior and intermediate tibiæ in front and the tarsi yellow; the latter have a ferruginous tinge above; the posterior tibiæ have a yellow stripe at their base above, the tarsi rufo-fusca; the wings subhyaline, their nervures fuscous. Abdomen: all the segments have a bisinuated marginal fascia.

Male.—This sex has the labrum, mandibles, palpi, clypeus, inner orbit of the eyes, the scape in front and the base of the flagellum, yellow; the tibiæ and tarsi are also yellow; the bands on the abdomen are broader; the three basal segments have a cinereous pubescence, that on the following is black.

Hab. St. John's Bluff, East Florida.

41. LARRA NUBILIPENNIS.

B.M.

Female. Length 7 lines.—Honey-yellow: the flagellum fulvous; the vertex with a transverse black line and a spot before the anterior stemma. The thorax reddish-yellow, with three black stripes; the breast has a large black patch which runs up the sides to the insertion of the wings; a transverse stripe on the metathorax at its base, and one or two oblique stripes on the truncated portion; the stripes vary in length in different individuals. Abdomen ferruginous at the base, the apical margins of the two basal segments fuscous; sometimes the margins of all the segments are ferruginous; beneath, the two basal segments yellow, the apical segments ferruginous.

Hab. India.

42. LARRA ORNATA.

B.M.

Stizus ornatus, *St. Farg. Hym.* iii. 294. 3.

Dahlb. Hym. Europ. i. 477.

Lucas, Explor. Sc. Algér. iii. 264. t. 13. f. 9.

Hab. Algeria (Oran).

43. LARRA PEREGRINA.

Male. Length 5 lines.—Black: the antennæ beneath, the clypeus, labrum, mandibles and palpi, yellow; the apical joint of the antennæ produced into a sharp spine, the eleventh joint has a sharp spine beneath. Thorax: the posterior margin of the prothorax, the tubercles, tegulæ and an epaulet over them, a spot

on each side of the scutellum and the post-scutellum, yellow; the wings hyaline, the nervures ferruginous; the legs yellow, with the coxæ, except their tips, the anterior and intermediate femora above, black; the posterior femora black, with their apex yellow, and a black spot on the anterior tibiæ beneath. Abdomen: a broad yellow band on the apical margins of all the segments; the first band slightly narrowed in the middle, the three following with two square notches on their anterior margin; beneath black; the second segment with a large stout bent tooth in the middle; the sixth segment has an obtuse tubercle in the middle.

Hab. Albania (Privesa).

Having only seen a single specimen of this species, it has not been thought advisable to remove it from the genus *Larra*, from which, however, it differs not only in having the venter armed with a tooth, as in the genus *Monedula*, but in having also a difference in the neururation of the wings; the marginal cell does not extend beyond the third recurrent nervure, and at the apex is abruptly truncated.

44. LARRA PERRISI.

Stizus Perrisi, *Dufour, Ann. Soc. Ent. Fr.* vii. 269. t. 9. f. 1.
St. Farg. Hym. iii. 295. 4.

Hab. France.

45. LARRA PICTA.

Stizus pictus, *Dahlb. Hym. Europ.* i. 478.

Hab. Egypt.

46. LARRA PULCHERRIMA.

B.M.

Female. Length 9 lines.—Black: the labrum, clypeus, inner orbit of the eyes as high as the anterior stemma, and a narrow line at the outer orbit, pale yellow; a yellow spot on the scape in front; the apical joint of the antennæ and the tips of the other joints beneath fulvous. Thorax: the posterior margin of the prothorax and also that of the scutellum, the post-scutellum and the tubercles, pale yellow; the legs ferruginous, with the coxæ and trochanters black; the tegulæ and an epaulet over them reddish-yellow; the wings fulvo-hyaline, the nervures ferruginous. Abdomen: an oblong macula on each side of the basal segment in the middle, another on the second segment rather longer and pointed within, a bisinuated waved fascia slightly interrupted in the middle, on the third, a bisinuated entire fascia at the base of the fourth segment, and a spot in the middle of

the fourth at its base, of a pale yellow; beneath, the second and third segments have on each side a minute yellow spot.

Hab. Shanghai. (Coll. R. Fortune, Esq.)

47. *LARRA REVERSA*.

B.M.

Female. Length $2\frac{1}{2}$ lines.—Black: the clypeus and a spot above, the scape in front, the anterior margin of the labrum and the palpi, yellow. Thorax: the posterior margin of the prothorax, the tubercles, a spot on the tegulae, another behind them, a spot on each side of the scutellum, another on the post-scutellum, and the lateral margins of the metathorax, yellow; the latter hollowed out behind; the anterior femora beneath, a stripe on the intermediate femora beneath at their apex, the anterior and intermediate tibiae and tarsi in front, yellow; the posterior tibiae have a yellow stripe at their base above; the wings hyaline, their nervures testaceous. Abdomen: an interrupted yellow band on the basal segment, an entire one on the apical margin of the second, widest laterally, a spot in the middle of the margin of the third, a narrow band on the fourth, and a spot on each side of the fourth; the insect covered with a scattered hoary pubescence.

The male closely resembles the female, but differs in having the clypeus black, and in having five entire yellow bands on the abdomen, the first broad and sinuated in the middle of its anterior margin.

Hab. Sumatra.

This species closely resembles the *Larra tridentata*, but is quite distinct, the colouring of the face of the sexes being the reverse of the European species; the abdomen is very delicately punctured, whereas it is rather strongly impressed in *L. tridentata*.

48. *LARRA RUFESCENS*.

B.M.

Female. Length 10 lines.—Rufo-fulvous: the face, clypeus, labrum, antennae in front, and the cheeks, reddish-yellow; the mesothorax, the posterior margin of the scutellum, the post-scutellum, and an arched stripe on the metathorax, yellow; the legs dashed with yellow; the wings yellow-hyaline, a fuscous cloud occupying the marginal and the second and third submarginal cells; the nervures ferruginous; the abdomen has an ovate-yellow macula on each side of the three basal segments, that on the first segment minute.

Var. a. The apical margins of the three basal segments fuscous, or black.

Hab. India (Punjaub).

49. LARRA RUFIPES.

Bembex rufipes, *Oliv. Encycl. Méth.* iv. 292. 12.

Van d. Lind, Obs. ii. 17. 5.

St. Farg. Hym. iii. 299. 8.

Lucas, Explo. Sc. Algér. iii. 265.

Hab. France; Algeria. (Coll. F. Smith.)

50. LARRA RUFICORNIS.

B.M.

Bembex ruficornis, *Fabr. Mant. Ins.* i. 286. 9; *Ent. Syst.* ii. 252. 16.

Oliv. Encycl. Méth. iv. 291. 4.

Vespa ruficornis, *Vill. Ent.* iii. 278. 31.

Gmelin, Syst. Nat. p. 2769. 159.

Stizus ruficornis, *Latr. Hist. Nat.* xiii. 303. 2.

Spin. Ins. Lig. i. 74. 2.

Van. d. Lind, Obs. ii. 14. 1.

Dahlb. Hym. Europ. i. 151. 85.

St. Farg. Hym. iii. 291. 1.

Lucas, Explo. Sc. Algér. iii. 264.

Hab. France; Germany; Italy; Spain; Albania.

51. LARRA RUFOCINCTA.

Stizus rufocinctus, *Dahlb. Hym. Europ.* i. 478.

Hab. Egypt.

52. LARRA SERVILLII.

B.M.

Bicyrtes Servillii, *St. Farg. Hym.* iii. 53. 1.

Hab. North America.

An examination of a large number of species of this genus shows the necessity for considerable latitude being given for variation in the neurulation of the anterior wings: a slight deviation from the type, *L. vespiformis*, cannot be regarded as of generic value; and the truncation or hollowing out of the metathorax is common to several species; to this division belong the species *L. fuscipennis*, *affinis*, *loriculata*, *fenestrata*, *argentifrons*, and *tridentata*. A slight difference in the neurulation, and the truncation of the metathorax, are the only differences which constitute the genus *Bicyrtes* of St. Fargeau.

53. LARRA SUCCINEA.

Larra succinea, *Klug, Symb. Phys.* dec. vi. t. 46. f. 3 ♂ ♀.

Hab. Egypt.

54. *LARRA TENELLA*.

Larra tenella, *Klug, Symb. Phys. dec. v. t. 46. f. 8 ♂*.

Hab. Egypt.

55. *LARRA TENUICORNIS*.

Male. Length 7 lines.—Black : the face below the insertion of the antennæ, and a narrow line at the inner orbits of the eyes, not running upwards so high as the anterior stemma, the scape in front, the clypeus, labrum and outer orbit of the eyes, yellow; a narrow black line runs from the antennæ to the base of the clypeus, which has a black spot; the mandibles and antennæ fulvous; the first joint of the flagellum very slender, its apex as well as that of the two following produced beneath. Thorax : the prothorax, the mesothorax on each side, the tubercles, tegulæ, scutellum and legs, ferruginous; the tibiæ have a yellow stain above; the wings fusco-ferruginous, the nervures ferruginous. Abdomen : the basal segment has a yellow macula on each side, the three following a broad interrupted band; the fifth and sixth segments yellow, with a central longitudinal ferruginous line; the apical segment ferruginous; beneath, the two basal segments have a large ferruginous macula.

Hab. The Gambia. (Coll. F. Smith.)

56. *LARRA TRIDENTATA*.

B.M.

Crabro tridentatus, *Fabr. Syst. Ent. 373. 1*; *Mant. i. 294. 1 ♂*.

Vespa tridentata, *Vill. Ent. iii. 279. 27*.

Gmelin, Syst. Nat. p. 2761. 98.

Bembex tridentata, *Fabr. Ent. Syst. ii. 251. 14*.

Scolia tridentata, *Fabr. Syst. Piez. 242. 22*.

Larra bifasciata, *Fabr. Ent. Syst. Supp. p. 252. 5 ♀*; *Syst. Piez. 220. 6*.

Stizus bifasciatus, *Jurine, Hym. p. 176. t. 14 ♂*.

Latr. Gen. Crust. et Ins. iv. 101.

Van d. Lind, Obs. ii. 16. 4 ♂ ♀.

Dahlb. Hym. Europ. i. 152. 88.

St. Farg. Hym. iii. 298. 7.

Lucas, Explo. Sc. Algér. iii. 266.

Hab. France; Algeria.

57. *LARRA TRIDENS*.

Vespa tridens, *Fabr. Spec. Ins. i. 464. 33 ♂*; *Mant. i. 289. 38*.

Vill. Ent. iii. 275. 22.

Vespa tridens, *Gmelin*, p. 2751. 42.

Oliv. Encycl. Méth. vi. 686. 83.

Crabro tridens, *Fabr. Ent. Syst.* ii. 298. 18; *Syst. Piez.* p. 313. 23.

Crabro cinctus, *Rossi, Faun. Etrus.* ii. 890 ♂.

Mellinus repandus, *Panz. Faun. Germ.* 73. 19 ♀.

Stizus sinuatus, *Latr. Hist. Nat.* xiii. 303. 3.

Spin. Ins. Lig. i. 74. 3.

Larra tridens, *Illig. ed. Faun. Etrus.* ii. 890.

Stizus repandus, *Jurine, Hym.* p. 178.

Stizus tridens, *Van d. Lind, Obs.* ii. 17. 6 ♂ ♀.

Dahlb. Hym. Europ. i. 153. 89.

St. Farg. Hym. iii. 301. 10.

Lucas, Explo. Sc. Algér. iii. 266.

Hab. Italy; France; Germany; Albania; Algeria.

58. *LARRA VESPIFORMIS.*

B.M.

Sphex vespiiformis, *Fabr. Spec. Ins.* i. 447. 23.

Tiphia vespiiformis, *Fabr. Mant. Ins.* i. 178. 1.

Larra vespiiformis, *Fabr. Ent. Syst.* ii. 220. 1; *Syst. Piez.* 219. 1.

Stizus vespiiformis, *Dahlb. Hym. Europ.* i. 154.

St. Farg. Hym. iii. 297. 6.

Hab. India (Madras; Punjaub; Northern India).

59. *LARRA ZONATA.*

Larra zonata, *Klug, Symb. Phys.* dec. v. t. 46. f. 2 ♀.

Hab. Arabia Felix.

Genus 3. *EXEIRUS.*

Exeirur, *Shuck. Trans. Ent. Soc. Lond.* ii. 71 (1836).

1. *EXEIRUS LATERITIUS.*

B.M.

Exeirur lateritius, *Shuck. Trans. Ent. Soc. Lond.* ii. 72. t. 8. f. 2.

Hab. Sydney; New South Wales; Tasmania.

Genus 4. *NYSSON.*

Crabro, pt., *Fabr. Syst. Ent.* 373 (1775).

Sphex, pt., *Fabr. Ent. Syst.* ii. 215 (1793).

Pompilus, pt., *Fabr. Ent. Syst. Supp.* 251 (1798).

Mellinus, pt., *Fabr. Ent. Syst. Supp.* 266 (1798).

Nysson, *Latr. Hist. Nat.* xiii. 305 (1804).

Oxybelus, pt., *Fabr. Syst. Piez.* 316 (1804).

1. NYSSON SPINOSUS.

B.M.

Crabro spinosus, *Fabr. Syst. Ent.* 373. 2; *Ent. Syst.* ii. 293. 1; *Syst. Piez.* 307. 1.

Rossi, Faun. Etrus. Mant. i. 139. 308.

Panz. Faun. Germ. 62. 15 ♂.

Mellinus interruptus, *Panz. Faun. Germ.* 72. 13 ♀.

Nysson spinosus, *Latr. Hist. Nat.* xiii. 305; *Gen. Crust. et Ins.* iv. 91.

Oliv. Encycl. Méth. viii. 408.

Van d. Lind, Obs. ii. 30. 1.

Shuck. Foss. Hym. 100. 1.

Dahlb. Hym. Europ. 169. 100 & 484. 1.

Wesm. Hym. Foss. Belg. 74. 1.

Sphex spinosa, *Villers, Ent.* iii. 246. 71.

Nysson geniculatus, *St. Farg. Hym.* iii. 47. 3 ♂.

Hab. Britain; France; Italy; Germany; Belgium; Norway.

2. NYSSON INTERRUPTUS.

B.M.

Mellinus interruptus, *Fabr. Ent. Syst. Supp.* 266. 4. 5.

Oxybelus interruptus, *Fabr. Syst. Piez.* 316. 1.

Mellinus dissectus, *Panz. Faun. Germ.* 77. 18. ? ♀.

Nysson maculatus, *Van d. Lind, Obs.* ii. 31. 4?

Dahlb. Hym. Europ. i. 170. 103?

Nysson omissus, *Dahlb. Hym. Europ.* i. 485. 3.

Nysson interruptus, *Shuck. Foss. Hym.* 101. 2.

St. Farg. Hym. Europ. iii. 45. 1.

Wesm. Hym. Foss. Belg. 80. 5.

Nysson Panzeri, *St. Farg. Hym.* iii. 52. 8.

Nysson Shuckardi, *Wesm. Hym. Foss. Belg.* 75. 2.

Hab. Britain; France; Germany; Belgium; Sweden; Scandinavia.

3. NYSSON MACULATUS.

B.M.

Sphex maculata, *Fabr. Ent. Syst.* ii. 215. 70.

Pompilus maculatus, *Fabr. Ent. Syst. Supp.* 251. 32; *Syst. Piez.* 196. 42.

Crabro trimaculatus, *Panz. Faun. Germ.* 78. 18 ♀, 51. 13 ♂.

Nysson interruptus, *Latr. Hist. Nat.* xiii. 306. 3.

Nysson maculatus, *Van d. Lind, Obs.* ii. 31. 4.

Dahlb. Hym. Europ. i. 170. 103.

Wesm. Hym. Foss. Belg. 78. 4.

Hab. Germany; Brussels; France?

4. NYSSON TRIMACULATUS.

B.M.

Crabro trimaculatus, *Rossi, Faun. Etrus.* ii. 95. 892 ♂.

Nysson nigripes, *Spin. Ins. Lig.* ii. 45. 38.

St. Farg. Hym. iii. 46. 2.

Nysson interruptus, *Oliv. Encycl. Méth.* viii. 408. 2.

Nysson trimaculatus, *Van d. Lind, Obs.* ii. 30. 2 ♂ ♀.

Shuck. Foss. Hym. 102. 3.

Dahlb. Hym. Europ. i. 169. 101.

Wesm. Hym. Foss. Belg. 77. 3.

Hab. Britain; Italy; France; Germany; Belgium; Sweden; Lapland; Finland.

5. NYSSON DIMIDIATUS.

B.M.

Nysson dimidiatus, *Jurine, Hym.* 199. t. 10. gen. 22.

Van d. Lind, Obs. ii. 33. 6.

Shuck. Foss. Hym. 104. 5.

Dahlb. Hym. Europ. i. 171. 105.

St. Farg. Hym. iii. 49. 5.

Wesm. Hym. Foss. Belg. 82. 6.

Nysson Wesmaeli, *St. Farg. Hym.* iii. 50. 6.

Nysson quadriguttatus, *Spin. Ins. Lig.* ii. 43?

Hab. Britain; France; Germany; Belgium.

6. NYSSON GUTTATUS.

B.M.

Nysson guttatus, *Oliv. Encycl. Méth.* viii. 409. 7.

Shuck. Foss. Hym. 103. 4.

Hab. Britain; France; Albania.

This is probably a highly-coloured variety of the *N. maculatus*; a still more highly-coloured example of that species is in the collection of the British Museum, from Albania; both being, in all probability, varieties of *N. dimidiatus*.

7. NYSSON SCALARIS.

B.M.

Nysson scalaris, *Illig. ed. Faun. Etrus.* ii. 157.

Nysson Dufourii, *St. Farg. Hym.* iii. 51. 7.

Nysson Dufouri, *Dahlb. Hym. Europ.* 485. 8.

Hab. France.

8. NYSSON EPEQLIFORMIS.

B.M.

Female. Length 5½ lines.—Black: the head and thorax coarsely punctured; the face and cheeks with bright silvery pubescence; on the vertex and disk of the thorax a thin auri-

chaleous pile; the clypeus and base of the mandibles yellowish-white; on the clypeus anteriorly is a triangular black spot, the tips of the mandibles rufo-piceous, the scape in front and one or two of the basal joints of the flagellum ferruginous; the rest of the flagellum is fusco-ferruginous beneath. Thorax: an interrupted line on the collar, the tubercles and a transverse line at the base of the scutellum, yellow; the tegulæ, posterior angles of the mesothorax and the legs ferruginous; the coxæ and trochanters black, except at their apex; at the base of the metathorax a coarsely reticulated enclosed space; the lateral angles spinose and covered with silvery pubescence. Abdomen: the four basal segments have laterally an oblong subovate pale yellow macula; the abdomen is finely punctured above and strongly so beneath.

Male.—Very closely resembles the female, but has the clypeus immaculate, the scape and basal joint of the flagellum yellow in front, and the abdomen has two additional spots on the fifth segment.

Hab. Albania. (Coll. S. S. Saunders, Esq.)

9. NYSSON DECEM-MACULATUS.

Nysson decem-maculatus, *Spin. Ins. Lig.* ii. 41.

Van d. Lind, Obs. ii. 33. 5.

Dahlb. Hym. Europ. i. 171. 104.

Hab. Italy.

10. NYSSON ABDOMINALIS.

Nysson abdominale, *Guér. Icon. Règ. Anim.* iii. 441.

Hab. Senegal.

11. NYSSON BASALIS.

Male. Length 4 lines.—Black: the face thinly covered with silvery pubescence; the apical joint of the antennæ rufo-testaceous; the head and thorax rugose; the posterior angles of the metathorax covered with silvery pubescence; the wings fusco-hyaline. The base of the abdomen covered with silvery pile; at the lateral apical margins of the four basal segments an elongate, subovate, yellowish-white macula, each in succession smaller than that on the basal segment; sometimes a minute one on the fifth segment; the lateral apical margins of the sixth and seventh segments produced into acute spines, the apical margin of the seventh segment rounded.

Hab. India. (Coll. W. W. Saunders, Esq.)

12. NYSSON? MARGINATUS.

Nysson marginatus, *Spin. Ann. Soc. Ent. Fr.* x. 113. 68. t. 3. f. 11 (1841).

Hab. Cayenne.

13. NYSSON RUFO-PICTUS.

B.M.

Female. Length 4 lines.—Head and thorax black; the clypeus, mandibles, scape, and five or six of the basal joints of the flagellum, ferruginous. Thorax: the collar, tubercles, a large spot beneath the wings, the tegulae and posterior angles of the mesothorax, the scutellum, post-scutellum, and tips of the spines which arm the metathorax and the legs, ferruginous; the lateral angles of the metathorax covered with silvery pubescence. Abdomen ferruginous; the basal margin of each segment has a central triangular black spot, the entire margin of one or two of the basal segments is also narrowly black, with angular black spots at the sides; beneath, the third, fourth and fifth segments are black.

Hab. — ?

14. NYSSON AURINOTUS.

Nysson aurinotus, *Say, Bost. Journ.* i. 368.

Hab. N. America (Indiana).

15. NYSSON GAYI.

Nysson Gayi, *Spin. Gay's Chili*, vi. 347. 1.

Hab. Chili.

Genus 5. SERICOPHORUS.

Sericophorus (*Shuck. MSS.*), *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. vii. 32 (1851).

Tachyrrhostus, *Sauss. Mém. Soc. Phys. Genève*, fasc. 1. 24 (1854).

1. SERICOPHORUS CHALYBEUS. Pl. IX. fig. 1.

B.M.

Sericophorus chalybeus, *Ann. & Mag. Nat. Hist.* 2nd ser. vii. 32.

Tachyrrhostus cyaneus, *Sauss. Mém. Soc. Phys. Genève*, fasc. 1. 26. 14.

Hab. Australia.

2. SERICOPHORUS VIRIDIS.

Tachyrrhostus viridis, *Sauss. Mém. Soc. Phys. Genève*, fasc. 1. 25. 13.

Hab. Australia.

3. SERICOPHORUS RELUCENS.

B.M.

Female. Length 3 lines.—Black: the front with a fine golden pile, that on the cheeks silvery; the flagellum of an orange-yellow beneath; the mandibles ferruginous, palest at their base. The prothorax posteriorly ferruginous, with an interrupted transverse pale yellow line; the scutellum, post-scutellum, tegulae and legs ferruginous; the coxae, trochanters, and extreme base of the femora black; the hinder margin of the mesothorax with a little golden pubescence; the metathorax has an enclosed portion at the base above, which is covered with thin golden pile; at the base of the metathorax is a transverse deep channel, from which a broad deep one runs downwards to the insertion of the abdomen; the wings hyaline, the nervures ferruginous. Abdomen covered with a rich effulgent golden pile, the segments in certain lights exhibiting angular silvery patches of pubescence; the apical margins of the segments narrowly rufo-piceous; the apical segment ferruginous; beneath smooth and shining, with a few scattered punctures.

Hab. Australia (Adelaide).

Genus 6. PALARUS.

Crabro, pt., *Fabr. Spec. Ins.* i. 470.

Philanthus, pt., *Fabr. Syst. Piez.* 304. 13 (1804).

Palarus, *Latr. Hist. Nat.* xiii. 74.

Gonius, *Jurine, Hym.* 205 (1807).

1. PALARUS FLAVIPES.

B.M.

Crabro flavipes, *Fabr. Spec. Ins.* i. 470; *Mant. Ins.* i. 295. 8.

Rossi, Faun. Etrus. Mant. i. 136. 301.

Oliv. Encycl. Méth. vi. 513. 10.

Philanthus flavipes, *Fabr. Ent. Syst.* ii. 290. 7; *Syst. Piez.* 304. 13.

Panz. Faun. Germ. 84. 24.

Palarus flavipes, *Latr. Hist. Nat.* xiii. 74. t. 14. f. 1 ♂; *Encycl.*

Méth. viii. 651. 3; *Gen. Crust. et Ins.* iv. 74. t. 14. f. 1.

Desm. Dict. Sc. Nat. i. 251.

Guér. Dict. Class. xii. 607.

Van d. Lind, Obs. i. 20. 1.

Dahlb. Hym. Europ. i. 124. 60.

St. Farg. Hym. iii. 232. i. t. 27. f. 4 ♂.

Sauss. Mém. Soc. Phys. Genève, xiv. fasc. i. 13.

Gonius flavipes, *Jurine, Hym.* 205. t. 10. gen. 24 ♂.

Panz. Krit. Revis. ii. 178.

Hab. France; Italy; Spain; Germany.

2. *PALARUS HISTRIO.*

Palarus histrio, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 474. 25 (1838).

Savigny, Expéd. d'Égypt. t. 11. f. 14?

St. Farg. Hym. iii. 233. 2.

Sauss. Mém. Soc. Phys. Genève, xiv. fasc. 1. 13.

Palarus lætus, *Klug, Symb. Phys.* dec. v. t. 47. f. 4, 5.

Hab. Egypt (Sakkara).

3. *PALARUS SPINOLÆ.*

Palarus Spinolæ, *Sauss. Mém. Soc. Phys. Genève*, xiv. fasc. 1. 14.
f. 3 ♀.

Hab. Egypt.

4. *PALARUS RUFIPES.*

Palarus rufipes, *Oliv. Encycl. Méth.* viii. 651. 2.

Spin. Ann. Soc. Ent. Fr. 1st ser. vii. 475. 14 ♂.

Sauss. Mém. Soc. Phys. Genève, xiv. fasc. 1. 15.

Hab. Egypt.

5. *PALARUS DONGALENSIS.*

Palarus Dongalensis, *Klug, Symb. Phys.* dec. v. t. 47. f. 1, 2.

Hab. Ethiopia (Ambukohl).

6. *PALARUS HUMERALIS.* Pl. IX. fig. 2.

B.M.

Palarus humeralis, *Duf. Ann. Soc. Ent. Fr.* (1853) p. 379. ♂ ♀.

Savig. Descr. de l'Égypt. t. 11. f. 13 ♀.

Sauss. Mém. Soc. Phys. Genève, xiv. fasc. 1. 13.

Hab. Algeria.

7. *PALARUS LEPIDUS.*

Palarus lepidus, *Klug, Symb. Phys.* dec. v. t. 47. f. 3.

Hab. Egypt (Sakkara).

8. *PALARUS AMBUSTUS.*

Palarus ambustus, *Klug, Symb. Phys.* dec. v. t. 47. f. 6.

Hab. Egypt (Sakkara).

Genus 7. *HELIORYCTES.*

Head transverse, about the width of the thorax; eyes oval, converging at the vertex; the stemmata placed in a triangle to-

wards the vertex; antennæ short, subfiliform, slightly thickened in the middle, pointed at the apex; the scape short, thick and cylindrical; the first joint of the flagellum short, about half the length of the second, the rest of about equal length; mandibles arcuate, acute at their apex, not toothed within, with a dentate process beneath towards the base; the labrum concealed. Thorax rotundate, the collar narrow, transverse; the scutellum transverse, oblong-quadrate; the metathorax truncated, with a mucro at the sides and about the middle of the truncation; the superior wings with one marginal and three submarginal cells; the marginal cell elongate, rounded at the apex, and slightly appendiculated; the first submarginal cell elongate, twice the length of the second and third united; the second submarginal cell petiolated; the third oblique, of nearly equal width; the first recurrent nervure received by the first submarginal cell near its apex; the second recurrent nervure entering the second submarginal cell near its apex; the legs stout; the anterior tarsi ciliated outside, the intermediate and posterior tibiæ spinose; the claws simple, having a pulvillus in their fork. Abdomen ovato-conic, truncated at the base, the apex acute.

1. *HELIORYCTES MELANOPYRUS*. Pl. IX. fig. 3.

Female. Length 4 lines.—Head and thorax black, opaque, finely and very closely punctured; the palpi pale rufo-testaceous, the mandibles ferruginous in the middle. Thorax: the metathorax above enclosed by a half-circular ridge, the enclosed space reticulated; wings dark fuscous, nearly black; the legs ferruginous, with the coxæ, trochanters, and base of the anterior femora behind, black; the posterior tibiæ incrassated towards their apex, roughened outside, and furnished with three rows of short acute spines; the intermediate tibiæ not roughened, but similarly armed to the posterior pair. Abdomen ferruginous, very closely and finely punctured, the two apical segments very smooth and shining, with a few scattered fine punctures; the sides of the apical segment carinated.

Hab. The Gambia. (Coll. F. Smith.)

Genus 8. *GORYTES*.

- Sphex*, pt., *Linn. Syst. Nat.* i. 941 (1766)
Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).
Crabro, pt., *Rossi, Faun. Etrus. App.* 123 (1790).
Mellinus, pt., *Fabr. Ent. Syst.* ii. 285 (1793).
Gorytes, *Latr. Hist. Nat.* xiii. 308 (1805).
Arpactus, *Jurine, Hym.* 194 (1807).

Hoplisus, *St. Farg. Ann. Soc. Ent. Fr.* i. 62 (1832).
Euspongius, *St. Farg. Ann. Soc. Ent. Fr.* i. 66 (1832).
Lestiphorus, *St. Farg. Ann. Soc. Ent. Fr.* i. 70 (1832).
Psammæcius, *St. Farg. Ann. Soc. Ent. Fr.* i. 72 (1832).
Agraptus, *Wesm. Hym. Foss. Belg.* 9.

1. GORYTES MYSTACEUS.

B.M.

Sphex mystacea, *Linn. Faun. Suec.* 412. no. 1653 ♂; *Syst. Nat.* i. 944. 21, & *Cab. Mus. Linn. Soc.*
Villers, Ent. iii. 231. 32.
Christ. Hym. 270.
Vespa campestris, *Linn. Faun. Suec.* 417. no. 1677 ♀; *Syst. Nat.* i. 950. 13, & *Cab. Mus. Linn. Soc.*
Fabr. Syst. Ent. 369. 31.
Rossi, Faun. Etrus. ii. 88. 873.
Christ. Hym. 234.
Oliv. Encycl. Méth. vi. 689. 96.
Mellinus mystaceus, *Fabr. Ent. Syst.* ii. 285. 1.
Panz. Faun. Germ. 53. 11.
Mellinus campestris, *Fabr. Ent. Syst.* ii. 287. 6; *Syst. Piez.* 299. 9.
Arpactus campestris, *Panz. Krit. Revis.* ii. 165.
Arpactus mystaceus, *Jurine, Hym.* 194.
Gorytes mystaceus, *Latr. Gen. Crust. et Ins.* iv. 89.
Illig. ed. Faun. Etrus. ii. 144. 873.
Van d. Lind, Obs. ii. 94. 9.
Shuck. Foss. Hym. 211. 1.
Dahlb. Hym. Europ. i. 166. 98.
St. Farg. Hym. iii. 55. 1. t. 25. f. 8 ♀.
Wesm. Hym. Foss. Belg. 85. 1.
Hab. Britain; Italy; France; Germany; Belgium; Norway;
 N. America.

2. GORYTES QUADRIFASCIATUS.

B.M.

Mellinus quadrifasciatus, *Fabr. Syst. Piez.* 298. 5 ♂.
Gorytes 4-fasciatus, *Latr. Gen. Crust. et Ins.* iv. 89.
Van d. Lind, Obs. ii. 96. 10 ♂ ♀.
Shuck. Foss. Hym. 215. 3.
Wesm. Not. Gor. Bull. Acad. Bruz. vi. 10. 4.
Gorytes dissectus, *Panz. Faun. Germ.* 80. 18?
Gorytes arenarius, *Van d. Lind, Obs.* ii. 97. 11 ♂.
Euspongius vicinus, *St. Farg. Ann. Soc. Ent. Fr.* i. 68. 2 (1832).
Gorytes libitinaris, *Curtis, Brit. Ent.* xi. 524.
Hoplisus quadrifasciatus, *Dahlb. Hym. Eur.* i. 159. 91.
Wesm. Hym. Foss. Belg. 86. 1.
Hab. Britain; France; Germany; Belgium.

3. GORYTES FARGEII.

B.M.

Gorytes campestris, *St. Farg. Ann. Soc. Ent. Fr.* i. 59. 2 (1832).
Wesm. Not. Gor. Bull. Acad. Brux. vi. 5. 2, & *Hym. Foss.*
Belg. 85. 2.

Mellinus quadrifasciatus, *Panz. Faun. Germ.* 98. 17 (*nec synon.*).
Gorytes Fargeii, *Shuck. Foss. Hym.* 214. 2.

Hab. Britain; France; Germany; Belgium; Scandinavia.

4. GORYTES LATICINCTUS.

B.M.

Euspongius laticinctus, *St. Farg. Ann. Soc. Ent. Fr.* i. 66. 1 (1832).
Gorytes laticinctus, *Shuck. Foss. Hym.* 217. 4.

Wesm. Not. Gor. Bull. Acad. Brux. vi. 11. 5.

Hoplissus laticinctus, *Dahlb. Hym. Europ.* 161. 92?
Wesm. Hym. Foss. Belg. 86. 2.

Hab. Britain; France; Germany; Belgium.

5. GORYTES BICINCTUS.

B.M.

Crabro bicinctus, *Rossi, Faun. Etrus. App.* 123. 110.

Gorytes bicinctus, *Van d. Lind, Obs.* ii. 93. 7.

Curtis, Brit. Ins. ii. fol. 524. t. 524.

Shuck. Foss. Hym. 219. 5.

Wesm. Not. Gor. Bull. Acad. Brux. vi. 11. 6.

Lestiphorus bicinctus, *St. Farg. Ann. Soc. Ent. Fr.* i. 70. 1 (1832).

Dahlb. Hym. Europ. i. 156. 90.

Wesm. Hym. Foss. Belg. 94. 1.

Hab. Britain; France; Italy; Germany; Belgium.

6. GORYTES QUINQUECINCTUS.

B.M.

Mellinus 5-cinctus, *Fabr. Ent. Syst.* ii. 287. 7; *Syst. Piez.* 299. 11.

Panz. Faun. Germ. 72. 14.

Hoplissus quinquecinctus, *Wesm. Not. Gor. Bull. Acad. Brux.* vi.
 10. 3, & *Hym. Foss. Belg.* 89. 4.

Dahlb. Hym. Europ. i. 162. 91.

St. Farg. Hym. iii. 60. 1.

Hab. France; Germany; Belgium.

This is very distinct from examples of *G. 4-cinctus* (var. with five yellow bands); the scape and three or four of the basal joints of the flagellum are yellow beneath, and much more slender than in *G. 4-cinctus*; the femora are yellow, with a black stripe above.

7. GORYTES ALBILABRIS.

Euspongius albilabris, *St. Farg. Hym.* iii. 71. 3.

Hab. France (Bordeaux).

8. GORYTES LACORDAIREI.

Hoplisius Lacordairei, *St. Farg. Ann. Soc. Ent. Fr.* ii. 64. 2 (1833);
Hym. iii. 64. 2.

Hab. France.

9. GORYTES PUNCTULATUS.

B.M.

Psammæcius punctulatus, *St. Farg. Ann. Soc. Ent. Fr.* i. 721 (1832);
Hym. iii. 75. 1.

Gorytes punctulatus, *Van d. Lind, Obs.* ii. 100. 14?

Hoplisius latifrons, *Dahlb. Hym. Europ.* i. 164. 96?

Hab. France (Paris).

10. GORYTES ALBIDULUS.

Hoplisius albidulus, *St. Farg. Ann. Soc. Ent. Fr.* i. 65. 3 ♀ (1832);
Hym. iii. 65. 3.

Dahlb. Hym. Europ. i. *synop. spec.* 482. 2.

Hab. France (Paris).

11. GORYTES PULCHELLUS.

Hoplisius pulchellus, *Wesm. Hym. Foss. Belg.* 90. 5.

Hab. Belgium.

12. GORYTES PLANIFRONS.

Hoplisius planifrons, *Wesm. Hym. Foss. Belg.* 87. 3.

Hab. Belgium.

13. GORYTES ELEGANS.

Female. Length $4\frac{1}{2}$ lines.—Black: the face opaque, the vertex slightly shining and delicately punctured; a minute spot on each side of the clypeus, another on the inner orbit of the eyes, and a spot on the scape in front, pale yellow; the palpi pale rufo-testaceous; the mesothorax and scutellum smooth and shining; the metathorax coarsely rugose, the enclosed space at the base of the metathorax divergently rugose-striate; the collar, a spot beneath the wings, and a transverse one on the scutellum, yellow; the wings hyaline, with a faint fuscous cloud occupying the marginal cell; the nervures and tegulæ pale rufo-testaceous;

the legs ferruginous; the coxæ, trochanters, and base of the anterior femora, black. Abdomen with fine pale yellow bands, that on the basal segment interrupted, the spots pointed within; beneath, impunctate.

Hab. Albania. (Coll. W. W. Saunders, Esq.)

This species very closely approaches the *Hoplisis albidulus*, but St. Fargeau describes the scutellum as being immaculate.

14. GORYTES CONCINNUS.

B.M.

Sphex concinna, Rossi, *Faun. Etrus. (ed. Illig.)* ii. 825. t. 6. f. 5.

Gorytes concinnus, Van d. Lind, *Obs.* ii. 92. 3.

Harpactes concinnus, Dahlb. *Hym. Europ.* i. 149. 81.

Agraptus concinnus, Wesm. *Hym. Foss. Belg.* 9.

Hab. Italy (Florence).

15. GORYTES IRIDIPENNIS.

Female. Length 3 lines.—Black: the scape in front, the clypeus, labrum, mandibles and palpi, of a testaceous yellow; the tips of the mandibles ferruginous; the flagellum rufo-testaceous beneath. Thorax: the collar, tubercles, a spot beneath the wings, an epaulet over the tegulæ, the scutellum, post-scutellum, and an oblong-ovate macula on each side of the metathorax, yellow; the mesothorax with large scattered punctures; the suture at the base of the scutellum consute; at the base of the metathorax is an angular space longitudinally grooved, but not enclosed; on each side are a few scattered punctures; wings hyaline and splendidly iridescent, the marginal cell occupied by a fuscous cloud; the legs pale rufo-testaceous; the anterior tibiæ behind, and the intermediate and posterior tarsi, femora and tibiæ, slightly fuscous above. Abdomen: the basal segment with a broad yellow band on the apical margin, which is emarginate in the middle; the four following segments have a narrow yellow marginal fascia; the four apical segments coarsely punctured; the marginal fasciæ are continued beneath, the apical segment entirely yellow.

Hab. Brazil (Santarem). (Coll. W. W. Saunders, Esq.)

16. GORYTES SERICATUS.

B.M.

Female. Length 4 lines.—Black, covered with a fine silky pile: the clypeus, scape in front, and the mandibles, yellow; tips of the latter ferruginous. Thorax smooth and slightly shining; the collar and posterior margin of the scutellum yellow; the suture at the base of the scutellum consute; the enclosed space

at the base of the scutellum elongate, forming half an oval, which is enclosed by a ridge; outside of the ridge a channel runs round the enclosed space, the channel transversely striated, the enclosure longitudinally grooved, forming eight sharp carinæ; the metathorax beyond the enclosure coarsely reticulated; the wings hyaline, with a faint cloud crossing the anterior pair at the base of the first submarginal cell; a cloud also occupies the marginal cell. Abdomen petiolated; a narrow yellow band on the apical margins of the second and three following segments; the apical segment reddish-yellow.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

17. *GORYTES FUMIPENNIS.*

B.M.

Female. Length 5 lines.—Black; thinly covered with a fine sericeous pile, that on the face bright and silvery; the head and thorax impunctate; the scape, extreme apex of the antennæ, clypeus, labrum and palpi, yellow; an ovate dark macula in the middle of the clypeus, touching its anterior margin. Thorax: a minute spot on each side of the mesothorax, touching the tegulæ, a transverse stripe on the apical margin of the scutellum, and a large oblong-ovate macula on each side of the metathorax, yellow; the suture at the base of the scutellum consute; the anterior wings dark fuscous, but hyaline beyond the marginal and second submarginal cells; the posterior wings faintly coloured at their anterior margin; the legs yellow beneath, the anterior tarsi and third and fourth joints of the intermediate and posterior pairs entirely so; the coxæ and basal joint of the posterior tarsi black; the apical joint of the intermediate and posterior tarsi fuscous. Abdomen petiolated, the basal segment yellow, with a large subovate black macula in the middle, above; the second segment has a very narrow yellow fascia on its apical margin.

Hab. Brazil?

18. *GORYTES TRISTRIGATUS.*

Mellinus tristrigatus, *Fabr. Syst. Piez.* 299. 7.

Hoplisus Behni, *Dahlb. Hym. Europ.* i. 165. 97.

Hoplisus tristrigatus, *Dahlb. Hym. Europ.* i. *synop. spec.* 483.

♂ & ♀.

Hab. Brazil.

19. *GORYTES BRASILIENSIS.*

B.M.

Gorytes Brasiliensis, *Shuck. Trans. Ent. Soc. Lond.* ii. 80 (1837-40).

Hoplisus seminiger, *Dahlb. Hym. Europ.* i. *synop. spec.* 483. 7 ♀.

Hab. Brazil.

20. GORYTES CAYENNENSIS.

Hoplisus Cayennensis, *Spin. Ann. Soc. Ent. Fr.* x. new ser. 116.
71 ♂ (1841).

Hab. Cayenne.

21. GORYTES VELUTINUS.

Hoplisus velatinus, *Spin. Gay's Chili*, vi. 338. 1.

Hab. Chili.

22. GORYTES PICTUS.

B.M.

Female. Length 4 lines.—Head black; the antennæ and mandibles ferruginous, the scape slightly stained with yellow at the apex in front; an abbreviated line on the inner and outer orbits of the eyes, that at the inner orbit widest and not extending to the clypeus; the anterior margin of the clypeus black; the mandibles ferruginous, yellow at their base. Thorax: the mesothorax, and the metathorax at its sides, ferruginous; the scutellum, post-scutellum, enclosed portion at the base of the metathorax, and the entire thorax beneath, black; the collar, tubercles, and the hinder margin of the scutellum, yellow; the wings hyaline, with a dark fuscous spot which occupies the marginal, second submarginal, and half the third submarginal cells; the nervures and tegulæ ferruginous; a spot beneath the wings and the legs ferruginous; the anterior tarsi ciliated outside, their apical joint and the intermediate tibiæ yellow in front; the posterior femora have a fuscous stripe within, and the tibiæ and tarsi are fuscous above. The first segment of the abdomen ferruginous; the second segment has a narrow pale ferruginous marginal fascia in the middle of its posterior margin, which expands at the sides and occupies the entire lateral margins; the third and fourth segments pale ferruginous, except their extreme basal margins, which are black; beneath, the abdomen is black, with the apical margins of the segments narrowly rufo-piceous.

Hab. Madras. (Coll. Sir Walter Elliott.)

23. GORYTES NATALENSIS. Pl. XI. fig. 3.

B.M.

Female. Length 7 lines.—Black: head slightly shining, the vertex covered with short fuscous down; the clypeus covered with thin silvery pubescence, its apical margin and the mandibles ferruginous; tips of the latter black; the scape yellow in front, the flagellum ferruginous beneath. Thorax: the collar, tubercles, lateral margins of the mesothorax, the tegulæ and scutellum,

obscurely ferruginous; the metathorax smooth and shining, and thinly covered with fuscous pile; the legs ferruginous, with the coxæ fuscous, except at their apex; the tibiæ and femora more or less fuscous above; the claw-joint of the anterior and intermediate tarsi, and the posterior pair, yellow, their extreme base fuscous; the anterior tarsi with long cilia exteriorly; all the tibiæ spinose; wings slightly coloured, with a dark fuscous cloud occupying the marginal cell and extending over the upper half of the second and third submarginal cells, and passing beyond to the apex of the wing; a fuscous spot at the apex of the external-medial cell. Abdomen petiolated, smooth and shining, the second segment yellow, the apical segment ferruginous, the superior surface flat, the lateral margins raised, the surface punctured, the apex produced into an elongate style.

Hab. Port Natal. (Coll. Mr. Plant.)

24. GORYTES TARSATUS.

B.M.

Male. Length 4 lines.—Black: the apex of the scape and the basal joint of the flagellum yellow in front; an abbreviated yellow line on the inner orbit of the eyes, in the middle; the apical joint of the flagellum slightly bent; the face thinly covered with a fine sericeous pile; the head closely punctured. Thorax coarsely punctured; the scutellum and post-scutellum coarsely rugose-striate; the metathorax coarsely rugose, the enclosed space at the base with coarse divergent striæ; the collar with an orange-yellow spot on each side; the anterior wings with a dark fuscous cloud along their anterior margins; the anterior tibiæ and tarsi of a reddish-yellow, the former with a dark stain behind; the tarsi are also darkest above; the intermediate and posterior tarsi pale yellow, nearly white, the apex of the joints black, as well as the claw-joint of all the tarsi. Abdomen punctured, the first, second and third segments with an orange-yellow marginal fascia; the first two widest and notched in the middle; the apex rounded, with the margin ferruginous; beneath, the second segment is shining, and has a number of large scattered punctures; the following segments finely punctured at their base and coarsely so on their apical margins.

Hab. Adelaide.

25. GORYTES CARBONARIUS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Jet-black, shining and delicately punctured: the face, cheeks, sides of the thorax and base of the abdomen with a thin black pubescence. The anterior tarsi ciliated; the mesothorax has an abbreviated slightly impressed

line in the centre of its anterior margin, and a similar one on each side; an impressed line on each side over the tegulæ; the suture at the scutellum consute; the metathorax smooth; the enclosed space at the base of the metathorax with a central abbreviated impressed line at the base; wings smoky-hyaline, the nervures black. Abdomen: the margins of the segments slightly depressed; beneath, the second segment abruptly produced at the base.

The male only differs in having the antennæ longer and the abdomen more strongly punctured.

Hab. New Zealand.

26. GORYTES BIPUNCTATUS.

Gorytes bipunctatus, Say, *Narr. Exped. St. Peter's River*, p. 72.
Dahlb. Hym. Europ. i. 157.

Hab. Pennsylvania; South Carolina.

27. GORYTES FULVIPENNIS.

Female. Length $4\frac{1}{2}$ lines.—Black, smooth and shining: the clypeus, labrum, mandibles, an abbreviated line at the inner orbit of the eyes, and the scape in front, yellow; the tips of the mandibles and the antennæ ferruginous; the flagellum fuscous towards the apex above, excepting the apical joint. Thorax: the collar, tubercles, a spot beneath the wings, the hinder margin of the scutellum, and an ovate spot on each side of the metathorax close to the insertion of the abdomen, yellow; wings fulvous, with a fuscous cloud in the marginal cell, the nervures and tegulæ ferruginous; the legs ferruginous; the coxæ, trochanters and base of the femora black, the apex of the two former ferruginous. Abdomen: the apical margins of the segments with a narrow yellow fascia, and the apical segment yellow.

Hab. N. America (United States). (Coll. W. W. Saunders, Esq.)

28. GORYTES SIMILLIMUS.

B.M.

Female. Length 5 lines.—Black: the head shining, delicately punctured, and with larger scattered punctures; the scape in front, four or five of the basal joints of the flagellum, the clypeus, and a line on the inner orbit of the eyes, yellow. Thorax: the collar, tubercles, hinder margin of the scutellum, and a small ovate spot on each side of the metathorax, yellow; the disk smooth and shining, with four abbreviated lines at its anterior margin; the suture at the base of the scutellum consute; the enclosed portion at the base of the metathorax striated at the base and smooth towards the apex; a deep channel runs

from the base to the apex of the metathorax; the wings fuscohyaline, palest at their apex, with a dark fuscous cloud occupying the marginal cell; the tibiæ, tarsi, and tips of the femora, yellow; the tibiæ behind and the posterior tarsi above, rufo-fuscous. Abdomen smooth and shining; a narrow yellow fascia on the posterior margin of each segment; a single style or process at the apex of the abdomen.

Hab. Nova Scotia. (Coll. Lieut. Redman.)

This species at first sight closely resembles the *G. 4-cinctus* of Europe.

29. GORYTES NIGRIFRONS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the head finely and closely punctured, the face with a thin silvery pubescence; the clypeus coarsely punctured, and having two minute yellow spots at the base; the scape yellow in front, and three or four of the basal joints of the flagellum of a reddish-yellow beneath; the apical half of the mandibles ferruginous. Thorax subopaque and very closely punctured; the collar, tubercles, a spot beneath the wings, a stripe over the tegulæ, and the post-scutellum, yellow; wings subhyaline, the marginal cell occupied by a dark fuscous cloud, which does not extend beyond it; the tibiæ and tarsi yellow, the tibiæ with a ferruginous stain behind; the claw-joint of the tarsi, the femora and coxæ dark rufo-piceous; the calcaria and claws pale. Abdomen shining and very finely punctured, covered with a fine sericeous pile, very brilliant in certain lights; the three basal segments with a yellow marginal fascia, the first widest, slightly notched in the middle and widened laterally; beneath, black and covered with a short griseous pubescence; the second segment with some scattered large deep punctures.

Hab. Nova Scotia. (Coll. Lieut. Redman.)

30. GORYTES PLACIDUS.

Female. Length $3\frac{1}{2}$ lines.—Black, shining and strongly punctured: the antennæ, clypeus, inner orbit of the eyes, labrum, mandibles and palpi, orange-red; tips of the mandibles rufo-piceous; the flagellum with the fourth and following joints fuscous above. Thorax: the collar, tubercles, an irregular-shaped spot beneath the wings, the sides of the disk of the mesothorax, the scutellum and metathorax, orange-red; the enclosed space at the base of the metathorax black and longitudinally grooved; the suture at the base of the scutellum consute; the anterior wings with a dark fuscous cloud extending from the base to their apex, and occupying more than half the width of the wings,

their posterior margin, as well as the posterior wings, subhyaline; the legs orange-red. Abdomen: the basal segment and posterior margin of the second segment orange-red, the latter widely emarginate at its anterior margin; the three apical segments very coarsely punctured.

The male differs in having the flagellum fuscous except the basal joint; the clypeus and inner orbit of the eyes yellow.

Hab. East Florida. (Coll. F. Smith.)

31. GORYTES RUFIPES.

B.M.

Female. Length 4 lines.—Black: the head and thorax strongly punctured; the scape, flagellum beneath, and three or four of the basal joints entirely, the anterior margin of the clypeus, a line on the inner orbit of the eyes, the labrum, mandibles and palpi, reddish-yellow, varying in different specimens. Thorax: the collar, tubercles, a spot beneath the wings, the lateral margins of the mesothorax and the scutellum, reddish-yellow; the metathorax and legs ferruginous, the enclosed portion at the base of the former black and longitudinally striated; the anterior wings with a broad fuscous cloud extending from the base to their apex, their posterior margin subhyaline, as well as the posterior wings. Abdomen shining and strongly punctured, the apical segments coarsely so; the basal segment ferruginous, its posterior margin, as well as that of the second, and sometimes of the two following segments, with an orange-yellow fascia; the first two bands widest, the second slightly emarginate in the middle; beneath black, the second segment with scattered large deep punctures; the following segments are smooth at their basal and punctured at their apical margins. Some examples have only two bands on the abdomen.

Hab. East Florida (St. John's Bluff). (Coll. E. Doubleday, Esq.)

32. GORYTES APICALIS.

B.M.

Male. Length 5 lines.—Black, smooth and shining: six or seven of the basal joints of the antennæ ferruginous; the scape in front, the clypeus, face on each side, a narrow line at the inner orbit of the eyes, not reaching their vertex, the labrum, mandibles and palpi, sulphur-yellow; the tips of the mandibles ferruginous. Thorax: the collar, tubercles, an irregularly-shaped large spot beneath the wings, an epaulet over the tegulæ, the scutellum, post-scutellum, and a large subovate macula on each side of the metathorax, yellow; the suture at the base of the scutellum smooth; the anterior legs yellow, the intermediate and posterior pairs pale ferruginous; the base of the coxæ black;

the wings brown, with the apex of the anterior pair hyaline. Abdomen: the apical margin of the segments with a broad yellow fascia which is continued beneath; that on the first segment has a small notch in the middle, and the two following are slightly attenuated in the middle; beneath, the bands are much dilated at the sides.

Hab. Georgia.

33. GORYTES DIVISUS.

B.M.

Male. Length 4 lines.—Black: the head shining, with scattered punctures; the antennæ, clypeus, sides of the face, labrum, mandibles and palpi, of a reddish-yellow. Thorax shining, the collar, tubercles, a spot beneath the wings, and the posterior margin of the scutellum, yellow; the wings fusco-hyaline, darkest in the marginal cell, the nervures and tegulæ rufo-testaceous; the legs ferruginous, the tarsi yellowish; the suture at the base of the scutellum smooth. Abdomen: the first two segments smooth and shining, the five apical segments subopaque and strongly punctured, the whole covered with a fine sericeous pile; the second segment much swollen, very convex; the first and second segments have a broad fascia on their apical margins, of a bright yellow, more or less suffused with ferruginous; the third and fourth segments have a narrow slightly interrupted fascia on their apical margins, the apex furnished with a single tooth or minute spine.

Hab. Georgia.

Genus 9. HARPACTUS.

Mutilla, pt., *Latr. Act. Soc. Nat. Par.* i. 11 (1792).

Sphex, pt., *Fabr. Ent. Syst. Supp.* 243 (1798).

Evania, pt., *Fabr. Ent. Syst. Supp.* 241 (1798).

Ceropales, pt., *Fabr. Syst. Piez.* 185 (1804).

Pompilus, pt., *Fabr. Syst. Piez.* 187 (1804).

Mellinus, pt., *Latr. Hist. Nat.* xiii. 318 (1804).

Arpactus, *Jurine, Hym.* 192 (1807).

Larra, pt., *Dahlb. Exercit. Hym.* 51 (1833).

Harpactus, *Shuck. Foss. Hym.* 221 (1837).

1. HARPACTUS LÆVIS.

B.M.

Mutilla lævis, *Latr. Act. Soc. Nat. Par.* i. 11. 12.

Sphex cruenta, *Fabr. Ent. Syst. Supp.* 244. 54-55.

Evania ruficollis, *Fabr. Ent. Syst. Supp.* 241. 3-4?

Ceropales ruficollis, *Fabr. Syst. Piez.* 186. 6?

Pompilus cruentus, *Fabr. Syst. Piez.* 192. 20.

Panz. Faun. Germ. 84. 20.

Coqueb. Illustr. i. 23. t. 5. f. 10.

Mellinus cruentatus, *Latr. Hist. Nat.* xiii. 318. 1.

Gorytes lævis, *Van d. Lind, Obs.* ii. 91. 1.

Arpactus lævis, *St. Farg. Ann. Soc. Ent. Fr.* i. 74. 1 (1832);

Hym. iii. 79. 1.

Shuck. Foss. Hym. 221. 1.

Dahlb. Hym. Europ. i. 148. 79.

Hab. Britain?; France; Germany; Belgium.

2. *HARPACTUS TUMIDUS*.

B.M.

Pompilus tumidus, *Panz. Faun. Germ.* 81. 15 ♂.

Mellinus tumidus, *Panz. Krit. Revis.* ii. 169.

Arpactus tumidus, *Jurine, Hym.* 194.

St. Farg. Ann. Soc. Ent. Fr. i. 77. 3.

Shuck. Foss. Hym. 222. 2.

Dahlb. Hym. Europ. i. 149. 80.

St. Farg. Hym. iii. 82. 3.

Wesm. Hym. Foss. Belg. 95. 2.

Larra tumida, *Dahlb. Exercit. Hym.* 51. 3.

Hab. Britain; France; Germany; Belgium; Sweden.

3. *HARPACTUS LUNATUS*.

Gorytes lævis, *Van d. Lind, Obs.* ii. 91. 1. var. β .

Larra lunata, *Dahlb. Exercit. Hym.* 52. 4.

Harpactes lunatus, *Dahlb. Hym. Europ.* i. 147. 78.

Arpactus lunatus, *Wesm. Hym. Foss. Belg.* 95. 1.

Hab. Germany; Belgium; Norway; Finland (Helsingfors).
(Coll. F. Smith.)

4. *HARPACTUS FORMOSUS*.

Arpactus formosus, *Jurine, Hym.* t. 10. f. 20.

St. Farg. Ann. Soc. Ent. Fr. i. 75. 2.

Harpactes formosus, *Dahlb. Hym. Europ.* i. 149. 80.

Hab. France; Germany.

5. *HARPACTUS ORNATUS*.

Female. Length $2\frac{1}{2}$ lines.—The head black, with the scape in front, the clypeus, inner orbit of the eyes, labrum, palpi and mandibles, yellow; tips of the latter ferruginous; the hinder margin of the vertex and upper portion of the inner orbit of the eyes ferruginous. Thorax red, with a black stain on the pectus;

the legs rufo-piceous, more or less fuscous above; the wings hyaline, with a faint cloud crossing the anterior wings towards their apex. Abdomen shining black; the basal segment smooth, the second punctured, and having on each side a large subovate white macula, the maculae connected by a narrow band on the apical margin of the segment; the fifth segment white.

Hab. Northern India. (Coll. F. Smith.)

This species very closely resembles the European *H. formosus*, but it differs in having a red prothorax and vertex, the meta-thorax is much more coarsely rugose, and the thorax shorter and broader altogether.

6. *HARPACTUS AFFINIS*.

Harpactes affinis, *Dahlb. Hym. Europ.* i. 150. 83.

Hab. Italy.

7. *HARPACTUS ELEGANS*.

Arpactus elegans, *St. Farg. Hym. Ann. Soc. Ent. Fr.* i. 79. 5 (1832); *Hym.* iii. 84. 5.

Hab. France.

8. *HARPACTUS CARCELI*.

Gorytes Carceli, *St. Farg. Ann. Soc. Ent. Fr.* i. 78. 4 ♂ (1832); *Hym.* iii. 83. 4.

Dahlb. Hym. Europ. i. 151. 84.

Hab. France; Germany.

9. *HARPACTUS LARROIDES*.

Arpactus larroides, *Spin. Gay's Chili*, vi. 341. 2.

Hab. Chili.

10. *HARPACTUS GAYI*.

Arpactus Gayi, *Spin. Gay's Chili*, vi. 340. 1.

Hab. Chili.

Genus 10. *ALYSON*.

Spheg, pt., *Panz. Faun. Germ. fasc.* 51.

Alyson, *Jurine, Hym.* 196 (1807).

1. *ALYSON SPINOSUS*.

B.M.

Alyson spinosus, *Jurine, Hym.* 196. t. 10. f. 21 ♀.

Alyson spinosus, *St. Farg. & Serv. Encycl. Méth.* x. 50. 4.

Van d. Lind, Obs. ii. 89. 3.

St. Farg. Hym. iii. 87. 2.

Alyson bimaculatus, *Dahlb. Hym. Europ.* i. 146 (var.) & 474.

Wesm. Hym. Foss. Belg. 99. 2 (var.?).

Hab. France; Germany.

The examples of this species in the Collection of the British Museum are very distinct from those of *A. bimaculatus*; the sculpture of the metathorax is very different, and the females have a white scutellum.

2. ALYSON TRICOLOR.

B.M.

Alyson tricolor, *St. Farg. & Serv. Encycl. Méth.* x. 50. 4.

Van d. Lind, Obs. ii. 90. 4.

St. Farg. Hym. iii. 89. 5.

Wesm. Hym. Foss. Belg. 98. 1.

Hab. France; Germany; Belgium.

3. ALYSON BIMACULATUS.

B.M.

Sphex fuscata, *Panz. Faun. Germ.* 51. 3.

Alyson bimaculatus, *Jurine, Hym.* 196.

Panz. Krit. Revis. ii. 170.

Van d. Lind, Obs. ii. 88. 2.

Dahlb. Hym. Europ. i. 142. 76 & 474.

St. Farg. Hym. iii. 88. 3 ♀.

Wesm. Hym. Foss. Belg. 99. 2.

Alyson fuscatus, *Panz. Krit. Revis.* ii. 171.

St. Farg. Hym. iii. 58. 4.

Hab. France; Germany; Belgium.

4. ALYSON MELLEUS.

Alyson melleus, *Say, Bost. Journ.* i. 380. 2.

Hab. N. America (Indiana).

5. ALYSON OPPOSITUS.

Alyson oppositus, *Say, Bost. Journ.* i. 380. 1.

Hab. N. America (Indiana).

Genus 11. DIDINEIS.

Pompilus, *pt.*, *Fabr. Ent. Syst. Supp.* 249 (1798).

Alyson, *pt.*, *Latr. Gen. Crust. et Ins.* iv. 86 (1809).

Didineis, *Wesm. Hym. Foss. Belg.* 96.

1. DIDINEIS LUNICORNIS.

B.M.

Pompilus lunicornis, *Fabr. Ent. Syst. Supp.* 249. 21; *Syst. Piez.* 194. 32 ♂.

Alyson lunicornis, *Latr. Gen. Crust. et Ins.* iv. 86.

St. Farg. & Serv. Encycl. Méth. x. 50. 1.

Van d. Lind, Obs. ii. 88. 1.

Shuck. Foss. Hym. 207. 1 ♂ ♀.

Dahlb. Hym. Europ. i. 142. 75 & 474.

St. Farg. Hym. iii. 86. 1.

Alyson Kennedii, *Curtis, Brit. Ent.* xiii. fol. & tab. 584 ♀.

Didineis lunicornis, *Wesm. Hym. Foss. Belg.* 97. 1.

Hab. Britain; France; Germany; Belgium.

M. Wesmael has separated this species from the others in the genus *Alyson* in consequence of the neuration of the anterior wings being different, and the intermediate tibiae being armed with only one spur at the apex.

Genus 12. MELLINUS.

Vespa, pt., *Linn. Faun. Suec.* 418 (1761).

Crabro, pt., *Fabr. Mant.* i. 294 (1787).

Mellinus, pt., *Fabr. Ent. Syst.* ii. 285 (1793).

1. MELLINUS ARVENSIS.

B.M.

Sphex vaga, *Linn. Faun. Suec.* 414. no. 1664? (type in *Cab. Mus. Linn. Soc.*?).

Scop. Ent. Carn. 785. fig. 785.

Vespa arvensis, *Linn. Faun. Suec.* 418. no. 1678 (and *Cab. Mus. Linn. Soc.*).

De Geer, Ins. ii. 2. 820. 3.

Schrank, Ins. Austr. 392. 791.

Fabr. Mant. i. 291. 49.

Christ. Hym. 234.

Vespa superbus, *Harris, Expos. Eng. Ins.* 227. 3. t. 37. f. 3.

Crabro bipunctatus, *Fabr. Mant.* i. 296. 18.

Oliv. Encycl. Méth. vi. 516. 20.

Crabro U-flavum, *Panz. Faun. Germ.* 17. 20.

Mellinus bipunctatus, *Fabr. Ent. Syst.* ii. 286. 4; *Syst. Piez.* 298. 6.

Mellinus arvensis, *Fabr. Ent. Syst.* ii. 287. 7 ♀; *Syst. Piez.* 299. 10.

Latr. Hist. Nat. xiii. 319. 3.

Van d. Lind, Obs. ii. 84. 1 ♂ ♀.

Shuck. Foss. Hym. 203. 1.

Mellinus arvensis, Zett. *Ins. Lapp.* 440. 1.

Dahlb. Hym. Europ. i. 226. 131.

St. Farg. Hym. iii. 91. 1.

Wesm. Hym. Foss. Belg. 96. 1.

Hab Britain and throughout Europe.

The *Sphex vaga* of the Linnæan Cabinet is the male of *M. arvensis*, but it does not agree with the description in the *Fauna Suecica*; in the Cabinet are also specimens of the *Crabro vagus* of Fabricius, and in all probability the label has at some time fallen off the pin and been attached to the wrong insect; the name given by Linnæus to the female is therefore retained; there can be little doubt of the *Sphex vaga* being identical with the *Crabro vagus*, the description in the *Fauna Suecica* exactly suiting that insect.

2. MELLINUS SABULOSUS.

B.M.

Crabro sabulosus, *Fabr. Mant.* i. 296. 17.

Olio. Encycl. Méth. vi. 515. 19 ♂.

Crabro frontalis, *Panz. Faun. Germ.* 46. 11 ♂.

Crabro petiolatus, *Panz. Faun. Germ.* 46. 12 ♀.

Mellinus sabulosus, *Fabr. Ent. Syst.* ii. 286. 2.

Van d. Lind, Obs. ii. 87. 3.

Shuck. Foss. Hym. 205. 2.

Dahlb. Hym. Europ. i. 230. 133.

Curtis, Brit. Ent. xiii. fol. 180. tab. 180.

Wesm. Hym. Foss. Belg. 96. 2.

Mellinus ruficornis, *Fabr. Ent. Syst.* ii. 286. 3 ♀.

Panz. Faun. Germ. 77. 17.

Latr. Hist. Nat. xiii. 519. 4.

Mellinus fulvicornis, *Fabr. Syst. Piez.* 300. 13 ♂.

Panz. Faun. Germ. 98. 18.

Van d. Lind, Obs. ii. 86. 2.

Hab. Britain; France; Italy; Germany; Belgium; Sweden.

Fam. 7. CRABRONIDÆ.

Head usually very large; the labrum not projecting; the abdomen oval or elliptical, sometimes gradually clavate.

Crabronites, *Latr. Gen. Crust. et Ins.* iv. (1804).

Crabronida, *Leach, Edin. Encycl.* (1812).

Crabronidæ, *Leach, Edin. Encycl.* (1817).

Genus 1. TRYPOXYLON.

Sphex, pt., *Linn. Syst. Nat.* 941 (1766).

Trypoxylon, *Latr. Préc. Car. Ins.* (1796).

Apius, *Jurine, Hym.* 140 (1807).

1. TRYPOXYLON FIGULUS.

B.M.

Sphex figulus, *Linn. Faun. Suec.* 1650; *Syst. Nat.* i. 942. 11.

Rossi, Faun. Etrus. ii. 61. 810.

Fabr. Ent. Syst. ii. 203. 19.

Schrank, Faun. Boic. ii. 322. 2160.

Christ. Hym. 291.

Panz. Faun. Germ. 80. 16.

Sphex fuliginosa, *Scop. Ent. Carn.* 711.

Rossi, Faun. Etrus. 63. 817.

Sphex leucostoma, *Schrank, Ins. Austr.* 771.

Illig. ed. Faun. Etrus. ii. 63. 817.

Trypoxylon figulus, *Latr. Hist. Nat.* xiii. 330.

Fabr. Syst. Piez. 181. 2.

Illig. ed. Faun. Etrus. 93. 810.

Spin. Ins. Ligur. i. 65. 1.

Shuck. Foss. Hym. 114. 1.

Van d. Lind, Obs. ii. 40. 1.

Zett. Ins. Lapp. 445. 1.

Dahlb. Dispos. Meth. Spec. Hym. 13. 82; *Hym. Europ.* i. 280 & 509. 2.

Guér. Icon. Règ. Anim. t. 71. f. 3.

St. Farg. Hym. iii. 228. 2.

Wesm. Hym. Foss. Belg. 106. 1.

Apius figulus, *Jurine, Hym.* 140. t. 9. gen. 8.

Hab. Britain; Italy; France; Germany; Belgium; Sweden; Finland; Lapland.

2. TRYPOXYLON CLAVICERUM.

B.M.

Trypoxylon clavicerum, *St. Farg. & Serv. Encycl. Méth.* x. 750. 1.

Shuck. Foss. Hym. 118. 3.

Dahlb. Hym. Europ. i. 279. 175.

Wesm. Hym. Foss. Belg. 107. 2.

Trypoxylon tibiale, *Zett. Ins. Lapp.* 466.

Hab. Britain; France; Germany; Belgium; Sweden; Lapland.

3. TRYPOXYLON ATTENUATUM.

B.M.

Trypoxylon attenuata, *Smith, Cat. Brit. Hym. Append.* 120.

Hab. Britain (Bristol).

4. *TRYPOXYLON ALBIPES*.

Female. Length $4\frac{1}{2}$ lines.—Black: the face covered with bright silvery pubescence; the mandibles and palpi pale testaceous; the cheeks have a silvery pubescence. Thorax thinly covered with a scattered silvery-white pubescence, which is most dense and glittering at the apex of the metathorax, on the pectus and anterior coxæ; the mesothorax and scutellum smooth and shining; at the base of the metathorax is an enclosed space, which is coarsely reticulated and has a deep central channel; on each side of the enclosed space it is transversely sulcate; wings hyaline and splendidly iridescent, the tegulæ pale testaceous; the base and extreme apex of the tibiæ pale rufo-testaceous; the tarsi white, with the apical joints slightly ferruginous. Abdomen elongate; the first two segments as long as the thorax, the basal segment slender; a fine silky short silvery-white pubescence entirely covers the abdomen, very bright in certain lights, particularly on the sides.

Hab. Albania. (Coll. W. W. Saunders, Esq.)

5. *TRYPOXYLON PILEATUM*.

Female. Length 4 lines.—Black: the clypeus covered with silvery pubescence; the face above the insertion of the antennæ produced into a shield-shaped form, rounded towards the vertex and triangular in front; from the lateral angles an acute edge runs into the emargination of the eyes, on each side of which is a smooth oblique plane. The mesothorax and scutellum smooth and shining; the metathorax enclosed at the base, the enclosure with coarse divergent striæ; from the apex of the enclosure an impressed channel runs downwards to the insertion of the abdomen; on each side of the channel it is delicately transversely striated and thinly covered with glittering silvery-white pubescence; the wings hyaline and beautifully iridescent. Abdomen shining, the margins of the three basal segments slightly constricted.

Hab. Madras. (Walter Elliott, Esq.)

6. *TRYPOXYLON BICOLOR*.

B.M.

Female. Length 7 lines.—Head and thorax black; the head thinly covered with scattered cinereous pubescence; the face with bright silvery pile; the mandibles rufo-piceous, the palpi pale testaceous. Thorax thinly covered with hoary pubescence; the metathorax above with a slightly impressed central channel, subinterrupted at the verge of the oblique truncated portion, beyond which it is much broader and more deeply impressed and

is continued downwards to the insertion of the abdomen ; the wings hyaline and iridescent, the tegulæ pale testaceous ; the anterior tibiæ in front, the tarsi, and also the tips of the intermediate and posterior tibiæ, the knees and tips of the joints of the tarsi, pale rufo-testaceous ; the calcaria pale testaceous ; in some examples the tips of the coxæ, the trochanters, and the tips of the other joints are pale testaceous. Abdomen petiolated ; the first segment very slender and black, the apex swollen and ferruginous, as well as the three following segments, these segments frequently more or less fuscous above, the three apical segments black.

Hab. Singapore ; Java.

7. TRYPOXYLON ELONGATUM.

B.M.

Male. Length 3 lines.—Black : head rugose, the clypeus with silvery pubescence ; the tips of the mandibles and the palpi pale testaceous. The mesothorax and scutellum shining ; the metathorax transversely rugose, with a deep central longitudinal channel and two oblique ones at the base which unite with the central one and form an enclosed space ; the wings hyaline, with their apical margins clouded ; the anterior tarsi and apical joints of the intermediate and posterior pairs testaceous. Abdomen elongate, smooth and shining ; the basal segment as long as the thorax.

Hab. Sierra Leone.

8. TRYPOXYLON FRONTALE.

Female. Length 3 lines.—Black : head subquadrate, very closely and finely punctured ; the mandibles pale rufo-testaceous ; the front produced into an angular prominence between the antennæ, the apex acute ; a slightly impressed line runs from the anterior stemma to the angular point. The posterior margin of the prothorax and the tegulæ, the anterior tibiæ in front, and the tarsi, pale testaceous ; the mesothorax and scutellum very closely and finely punctured ; the wings hyaline and splendidly iridescent ; the metathorax transversely striated ; at the base is an enclosed space which is obliquely striated, with a deep longitudinal channel, slightly interrupted at the verge of the oblique truncation. Abdomen smooth and shining, covered with a fine cinereous pile.

Hab. Africa. (Coll. F. Smith.)

9. TRYPOXYLON RUFIMANUM.

Trypoxylon rufimanum, *Spin. Mem. Accad. Torino*, xiii. 59. 42 (1853).

Hab. Brazil (Para).

10. TRYPOXYLON ANNULARE.

Trypoxylon annulare, *Dahlb. Hym. Europ.* i. 282.

Hab. Brazil.

11. TRYPOXYLON AURIFRONS.

B.M.

Trypoxylon aurifrons, *Shuck. Foss. Hym.* 117. 2.

Dahlb. Hym. Europ. i. 285.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

12. TRYPOXYLON FUGAX.

B.M.

Trypoxylon fugax, *Fabr. Syst. Piez.* 182. 4.

Dahlb. Hym. Europ. 281.

Hab. Brazil.

13. TRYPOXYLON FUSCIPENNE.

B.M.

Trypoxylon fuscipennis, *Fabr. Syst. Piez.* 181. 3.

Trypoxylon fuscipenne, *Dahlb. Hym. Europ.* i. 283.

Hab. Brazil.

14. TRYPOXYLON ALBITARSE.

B.M.

Trypoxylon albitarse, *Fabr. Syst. Piez.* 180. 1.

St. Farg. & Serv. Encycl. Meth. x. 750.

Dahlb. Hym. Europ. i. 286.

St. Farg. Hym. iii. 228. 1. t. 27. f. 3.

Trypoxylon politum, *Say, Bost. Journ.* i. 373. 1.

Hab. Brazil (Para); California; United States.

15. TRYPOXYLON NITIDUM.

Female. Length $4\frac{1}{2}$ lines.—Black: the face covered with silvery pubescence; the mandibles and palpi rufo-testaceous. Thorax: above shining; the mesothorax rather strongly but not closely punctured; the metathorax obliquely striated at the base, beyond which it is striated transversely, at the sides is a little silvery pubescence; the thorax beneath smooth, shining and punctured; wings hyaline, faintly clouded at their apex; the knees, apex of the femora and basal joint of the tarsi rufo-testaceous. Abdomen: the two basal segments very smooth and shining, the base of the second segment rufo-testaceous; the apical margins of the third, fourth and fifth segments narrowly testaceous.

Hab. Brazil. (Coll. F. Smith.)

16. TRYPOXYLON ORNATUM.

Female. Length 4 lines.—Black: the face clothed with golden pubescence, including the emargination of the eyes; the palpi and mandibles pale testaceous, the latter ferruginous at their apex; the cheeks have a thin golden pubescence. The posterior margin of the prothorax, the tubercles, an epaulet over the tegulæ, and a patch on each side of the post-scutellum, covered with golden pubescence; the mesothorax and scutellum shining, with scattered shallow punctures; the metathorax transversely striated; from the insertion of the abdomen a broad deep groove passes about half-way upwards, at its termination is a shallow subtriangular depression; the wings hyaline, their apical margins clouded, the nervures testaceous. Abdomen clavate, the base of the second segment rufo-testaceous.

Hab. Brazil. (Coll. F. Smith.)

This species closely resembles the *T. fugax* of Fabricius, but is at once distinguished by the sculpture of the metathorax; in *fugax* it is smooth, shining and convex.

17. TRYPOXYLON EXCAVATUM.

B.M.

Female. Length 5 lines.—Black: the face covered with silvery pubescence; the mandibles rufo-piceous, palest at their base. Thorax: the sides, beneath the metathorax and legs, with a thin cinereous pubescence, at the sides of the metathorax it has a silvery brightness; the mesothorax and scutellum very smooth and shining; at the sides of the post-scutellum a little silvery-white pubescence; the metathorax above with a broad deep excavation which narrows towards the verge of the truncation, and forms a deep channel which runs down to the insertion of the abdomen; the excavation has a few faintly impressed transverse lines in the middle; wings hyaline, with a fuscous cloud occupying the marginal cell as well as the extreme apex of the wings. Abdomen covered with fine cinereous pile, most dense on the basal margins of the segments.

The male closely resembles the female, but has the mandibles paler, and has also the base of the first joint of the anterior and intermediate tarsi pale; the second and third segments of the abdomen are deeply concave beneath, and very smooth and shining.

Hab. Jamaica.

18. TRYPOXYLON SUBIMPRESSUM.

B.M.

Male. Length 4 lines.—Black: the face with a dense silvery

pubescence; the mandibles obscurely rufo-piceous; the cheeks with bright silvery pile; the vertex opaque, and having a number of large subimpressed punctures. Thorax: a line of silvery pubescence on the posterior margin of the prothorax, another over the tegulæ; the anterior and posterior margins of the scutellum, and the sides of the metathorax covered with silvery pubescence; a silvery line in the middle of the pectus and also on the margins of the mesothorax beneath, very bright and glittering; a short thin hoary pubescence is scattered over the thorax; the mesothorax very smooth and shining, covered with faintly impressed punctures; the metathorax shining and similarly sculptured to the mesothorax, the truncation transversely striated, and having a deeply impressed longitudinal channel; wings hyaline, a dark fuscous cloud occupying the marginal cell and passing round the apex of the wings. Abdomen smooth and shining, the basal margins of the segments with bands of cinereous pile.

Hab. St. Domingo.

19. *TRYPOXYLON CLAVATUM*.

B.M.

Trypoxylon clavatus, Say, *Bost. Journ.* i. 374. 2.

Hab. N. America (United States).

20. *TRYPOXYLON CARINATUM*.

Trypoxylon carinatus, Say, *Bost. Journ.* i. 374. 3.

Hab. N. America (Indiana).

21. *TRYPOXYLON COLLINUM*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the face covered with golden pubescence; the anterior margin of the clypeus, the scape, and five or six of the basal joints of the flagellum, ferruginous. The prothorax, tegulæ, legs, and two basal segments of the abdomen, ferruginous; the wings fuscous, with a violet iridescence, palest towards their base; the vertex, mesothorax and scutellum strongly punctured; the base of the metathorax with divergent striæ, beyond which it is transversely coarsely rugose; in some examples the metathorax has a ferruginous stain at the base.

Hab. East Florida (St. John's Bluff). (Coll. E. Doubleday, Esq.)

22. *TRYPOXYLON FRIGIDUM*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Black: the head subopaque; on the face between the antennæ is a slightly elevated carina; the face and cheeks covered with silvery pubescence. Thorax sub-

opaque, very delicately punctured, and with fine, short, downy, silvery pubescence, most dense on the sides and beneath; the outer margin of the tegulæ pale testaceous; the wings subhyaline, their apical margins dark fuscous, the nervures black; the metathorax obliquely striated above, the striation extending to the verge of the truncation, which has a deep central channel and is obliquely and finely striated; the legs simple, the calcaria pale testaceous. Abdomen shining, with a fine thin sericeous pubescence.

Hab. Hudson's Bay.

Very like *Trypoxylon figulus*, but it is proportionally a shorter insect, the abdomen is more thickened at the base, and the metathorax more evenly striated, and wanting the broad central channel which characterizes *T. figulus*.

Genus 2. NITELA.

Nitela, *Latr. Gen. Crust. et Ins.* iv. 210. 1 (1806).

1. NITELA SPINOLÆ. Pl. XII. fig. 4.

Nitela Spinolæ, *Latr. Gen. Crust. et Ins.* iv. 77.

Oliv. Encycl. Méth. viii. 204. 1.

Guérin, Diet. Class. xi. 572.

Van d. Lind, Obs. ii. 39. 1.

Dahlb. Hym. Europ. i. 297. 180.

St. Farg. Hym. iii. 210. t. 27. f. 1 ♀.

Hab. France; Italy; Sweden.

Genus 3. OXYBELUS.

Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).

Apis et Nomada, pt., *Fabr. Mant.* i. (1787).

Crabro, pt., *Fabr. Ent. Syst.* ii. 293 (1793).

Oxybelus, *Latr. Hist. Nat.* xiii. (1805).

1. OXYBELUS UNIGLUMIS.

B.M.

Vespa uniglumis, *Linn. Faun. Suec.* 1681; *Syst. Nat.* i. 951. 18.

Villers, Ent. iii. 271. 14.

Christ. Hym. 246.

Crabro uniglumis, *Fabr. Syst. Ent.* 376. 12; *Ent. Syst.* ii. 300.

Rossi, Faun. Etrus. ii. 92. 884.

Oliv. Encycl. Méth. viii. 595. 34.

Panz. Faun. Germ. 64. 14.

Oxybelus uniglumis, *Latr. Hist. Nat.* xiii. 307. 2.

Fabr. Syst. Piez. 316. 2.

Oliv. Encycl. Méth. viii. 595. 8.

Van d. Lind, Obs. ii. 35. 5.

Shuck. Foss. Hym. 107. 1.

Zett. Ins. Lapp. 446. 1.

Dahlb. Hym. Europ. i. 273. 172.

Guér. Icon. R. Anim. Ins. t. 71. f. 2.

St. Farg. Hym. iii. 221. 13.

Wesm. Hym. Foss. Belg. 157. 1.

Hab. Britain; France; Italy; Germany; Sweden; Lapland.

2. OXYBELUS MUCRONATUS.

B.M.

Crabro mucronatus, *Fabr. Ent. Syst.* ii. 300. 25.

Oxybelus mucronatus, *Fabr. Syst. Piez.* 318. 5.

Latr. Gen. Crust. et Ins. iv. 79.

Dahlb. Hym. Europ. i. 265. 162.

Wesm. Hym. Foss. Belg. 157. 2.

Oxybelus ferox, *Shuck. Foss. Hym.* 108. 2 ♂.

Oxybelus argentatus, *Curtis, Brit. Ent.* x. 480 ♀.

Shuck. Foss. Hym. 111. 5.

Hab. Britain; France; Italy; Germany; Belgium; Sweden.

3. OXYBELUS TRISPINOSUS.

B.M.

Apis trispinosa, *Fabr. Mant.* i. 303. 60.

Crabro trispinosus, *Fabr. Ent. Syst.* ii. 301. 26.

Oxybelus trispinosus, *Fabr. Syst. Piez.* 318. 7.

Oliv. Encycl. Méth. viii. 597. 15?

Van d. Lind, Obs. ii. 38. 13?

Dahlb. Hym. Europ. i. 270. 169.

St. Farg. Hym. iii. 222. 14.

Wesm. Hym. Foss. Belg. 159. 4.

Oxybelus nigripes, *Oliv. Encycl. Méth.* viii. 596. 12 ♀.

Shuck. Foss. Hym. 109. 3.

St. Farg. Hym. iii. 217. 7.

Van d. Lind, Obs. ii. 37. 10.

Oxybelus mucronatus, *St. Farg. Hym.* iii. 216. 6 ♂?

Hab. Britain; France; Germany; Belgium; Sweden.

4. OXYBELUS QUATUORDECIM-NOTATUS.

B.M.

Oxybelus 14-notatus, *Jurine, Hym.* 217. t. 11. f. 5.

Latr. Gen. Crust. et Ins. iv. 79.

Oliv. Encycl. Méth. viii. 596. 13.

Oxybelus 14-notatus, *Van d. Lind, Obs.* ii. 37. 11.

St. Farg. Hym. iii. 220. 12.

Oxybelus quatuordecim-guttatus, *Shuck. Foss. Hym.* 112. 6.

Dahlb. Hym. Europ. i. 270. 168.

Hab. France; Italy; Greece.

5. OXYBELUS BELLICOSUS.

B.M.

Oxybelus bellicosus, *Oliv. Encycl. Méth.* viii. 595. 9.

Shuck. Foss. Hym. 110. 4 ♂.

Van d. Lind, Obs. ii. 36. 7.

Dahlb. Hym. Europ. i. 269. 167.

St. Farg. Hym. iii. 217. 8.

Lucas, Explo. Sc. Algér. iii. 262.

Hab. France; Germany (Silesia).

The type specimen in the Collection of the British Museum is certainly a male: it is described by Shuckard as a female.

6. OXYBELUS LINEATUS.

B.M.

Nomada lineata, *Fabr. Mant.* i. 206. 3.

Crabro lineatus, *Fabr. Ent. Syst.* ii. 300. 24.

Panz. Faun. Germ. 73. 18.

Oxybelus lineatus, *Fabr. Syst. Piez.* 317. 3.

Oliv. Encycl. Méth. viii. 594. 3.

Latr. Gen. Crust. et Ins. iv. 79.

Van d. Lind, Obs. ii. 34. 2.

Crabro tridens, *Fabr. Ent. Syst. Supp.* 270. 24-5.

Oxybelus tridens, *Fabr. Syst. Piez.* 318. 5.

Van d. Lind, Obs. ii. 37. 9.

St. Farg. Hym. iii. 223. 15.

Hab. France; Germany.

7. OXYBELUS BIPUNCTATUS.

B.M.

Oxybelus bipunctatus, *Oliv. Encycl. Méth.* viii. 597. 16 ♀.

Van d. Lind, Obs. 38. 14?

St. Farg. Hym. iii. 220. 11.

Wesm. Hym. Foss. Belg. 160. 5.

Oxybelus nigro-æneus, *Shuck. Foss. Hym.* 113. 8 ♂.

Dahlb. Hym. Europ. i. 266. 163.

Oxybelus hæmorrhoidalis, *Dahlb. Hym. Europ.* i. 272. 170?

Hab. France; Germany; Belgium.

8. OXYBELUS FURCATUS.

Oxybelus furcatus, *St. Farg. Hym.* iii. 214. 4 ♀.

Oxybelus furcatus, *Wesm. Hym. Foss. Belg.* 138. 5.
Oxybelus mucronatus, *Van d. Lind, Obs.* ii. 37. 8 ♂.
Hab. France; Germany; Belgium.

9. *OXYBELUS ARMIGER.*

Oxybelus armiger, *Oliv. Encycl. Méth.* viii. 594. 5.
Van d. Lind, Obs. ii. 56. 6.
St. Farg. Hym. ii. 213. 3.
Hab. France.

10. *OXYBELUS LATRO.*

Oxybelus latro, *Oliv. Encycl. Méth.* viii. 594. 4.
Van d. Lind, Obs. ii. 35. 3.
St. Farg. Hym. iii. 211. 1.
Hab. France; Italy.

11. *OXYBELUS PUGNAX.*

Oxybelus pugnax, *Oliv. Encycl. Méth.* viii. 595. 6 ♀.
Van d. Lind, Obs. ii. 35. 4.
Wesm. Hym. Foss. Belg. 163. 7 ♂ ♀.
Hab. Geneva.

12. *OXYBELUS RAPTOR.*

Oxybelus raptor, *St. Farg. Hym.* iii. 219. 10 ♀.
Hab. France (Paris).

13. *OXYBELUS PYGMÆUS.*

Oxybelus pygmæus, *Oliv. Encycl. Méth.* viii. 597. 17.
Hab. France.

14. *OXYBELUS NIGRICORNIS.*

B.M.

Oxybelus nigricornis, *Shuck. Foss. Hym.* 112. 7 ♂ ♀.
Dahlb. Hym. Europ. i. 267. 164.
Hab. Britain?

15. *OXYBELUS BELLUS.*

Oxybelus bellus, *Dahlb. Hym. Europ.* i. 268. 166.
Hab. Germany.

16. OXYBELUS HÆMORRHOIDALIS.

Oxybelus hæmorrhoidalis, *Oliv. Encycl. Méth.* viii. 596. 13.
Van d. Lind, Obs. ii. 38. 12?

Hab. France; Germany.

17. OXYBELUS FISSUS.

Oxybelus fissus, *St. Farg. Hym.* iii. 215. 5.

Hab. Lyons.

18. OXYBELUS VICTOR.

Oxybelus victor, *St. Farg. Hym.* iii. 218. 9.

Hab. Paris.

19. OXYBELUS VARIEGATUS.

Oxybelus variegatus, *Wesm. Hym. Foss. Belg.* 162. 6 ♀.

Hab. Geneva.

20. OXYBELUS MACULIPES.

Female. Length 3 lines.—Black: the scape yellow in front; the flagellum ferruginous, slightly fuscous above; the mandibles ferruginous, their tips black; the face covered with silvery down; the head and thorax strongly punctured; a spot on each side of the collar, the tubercles, a spot on each side of the scutellum, and the squama at the posterior margin of the scutellum, yellow; the latter membranaceous exteriorly; the mucro at the base of the metathorax slightly curved, grooved above and acute at its apex; wings hyaline, nervures testaceous, the tegulæ pale testaceous; the legs ferruginous, the anterior and intermediate femora beneath and the base of the tibiæ yellowish-white. Abdomen strongly punctured; the first and second segments have a large pale yellow macula on each side, those on the second pointed within; the third and fourth segments have a transverse band, attenuated in the middle, that on the third sometimes slightly interrupted; the fifth has a semicircular spot; the apical segment ferruginous.

Hab. Albania. (Coll. W. W. Saunders, Esq.)

21. OXYBELUS LANCIFER.

Oxybelus lancifer, *Oliv. Encycl. Méth.* viii. 594. 2.

Van d. Lind, Obs. ii. 34. 1.

Hab. Spain.

22. OXYBELUS HASTATUS.

Oxybelus hastatus, *Fabr. Syst. Piez.* 317. 4.

Oliv. Encycl. Méth. viii. 594. 1.

Dahlb. Hym. Europ. i. 273. 171.

Hab. Mogadore ; Spain.

23. OXYBELUS LAMELLATUS.

Oxybelus lamellatus, *Oliv. Encycl. Méth.* viii. 593. 7.

Hab. Egypt.

24. OXYBELUS ARABS.

B.M.

Oxybelus Arabs, *St. Farg. Hym.* iii. 213. 3.

Lucas, Espl. Sc. Algér. iii. 261. t. 12. f. 6.

Hab. Algeria (Oran).

25. OXYBELUS AGILIS.

B.M.

Male. Length 3 lines.—Black : head punctured ; the flagellum ferruginous, the mandibles rufo-piceous at their apex. Thorax punctured ; a spot on each side of the collar, the tubercles, tegulae in front, the squama, and the lateral margins of the scutellum narrowly, of a yellowish-white ; the scutellum rugose and having a central carina ; the mucro at the base of the metathorax concave above and obtuse at the apex ; the anterior and intermediate tibiae as well as the tarsi rufo-fulvous ; the anterior and intermediate tibiae outside, the base of the posterior pair and a stripe within, white ; the latter are fusco-ferruginous outside. The abdomen with a subinterrupted yellowish-white fascia on the five basal segments ; the apical segment obtuse at the apex, somewhat swollen at the base, the sides margined and coarsely punctured ; above, the abdomen is shining and strongly punctured, and the entire insect has a thinly scattered short griseous pubescence, the face being silvery.

Hab. India.

26. OXYBELUS TRIDENTATUS.

B.M.

Male. Length $2\frac{1}{2}$ lines.—Black : the head and thorax thinly sprinkled with short glittering silvery hairs, most dense on the face and cheeks ; the apex of the scape and the first joint of the flagellum yellow in front ; the flagellum fusco-ferruginous ; the anterior margin of the clypeus armed with three stout teeth ; the mandibles yellow at their base and ferruginous at their apex. Thorax : the collar, tubercles, tegulae, the squama, and two

oblique lines on each side of the scutellum, running to the base of the wings, white; the anterior and intermediate tibiae in front, and the posterior pair at their base, white; the posterior tibiae have also a white stripe within; the anterior and intermediate tibiae behind and all the tarsi fulvous; the mucro at the base of the metathorax slightly curved, linear, with the apex obtuse. Abdomen: the basal segment with a broad, the second and sometimes the third, with a narrow slightly interrupted white fascia; the apical segment coarsely punctured and truncate at the apex.

Hab. India.

Some examples differ in having the pale markings more or less yellow.

27. *OXYBELUS RUFICORNIS.*

B.M.

Female. Length $2\frac{1}{2}$ lines.—Black: head closely punctured; the face and cheeks with bright silvery pubescence; a thin griseous pubescence on the vertex; the antennae ferruginous, the scape white in front; the mandibles white, their apex ferruginous. Thorax punctured, thinly covered with griseous pubescence; the collar, tubercles, tegulae and extreme base of the wings, an ovate spot on each side of the scutellum, the squama, the tip of the mucro at the base of the metathorax, and two narrow lines running from the base of the wings to the scutellum, yellowish-white; the wings hyaline, the nervures pale testaceous; the coxae and femora ferruginous, the tips of the latter, the tibiae and tarsi, yellowish-white; the intermediate and posterior tibiae with a ferruginous stripe outside. Abdomen finely punctured and shining; the basal segment with a large subovate macula on each side, the second segment with a broad fascia, emarginate in the middle anteriorly and narrowed towards the lateral margins, and a narrower continuous fascia on the apical margins of the two following segments, yellowish-white; the apical segment obscurely ferruginous.

Hab. India.

28. *OXYBELUS SABULOSUS.*

B.M.

Female. Length $2\frac{1}{2}$ lines.—Black: head punctured, the face and cheeks with a silvery pubescence; the flagellum fulvous beneath towards the apex; the mandibles yellow at their base and ferruginous at their apex. Thorax strongly punctured; the collar, tubercles, and squama, yellow; the scutellum with a central carina; the mucro short, broad, concave above and notched

at the apex; the anterior femora outside and the tibiae yellow; the intermediate femora at their apex beneath, the tibiae at their base and also the base of the posterior pair, yellow; the intermediate and posterior tibiae at their apex and also the tarsi ferruginous; the wings subhyaline, the tegulae pale rufo-testaceous. Abdomen: the four basal segments have a subovate yellow macula on each side, the apex ferruginous.

Hab. India.

29. *OXYBELUS MARGINATUS.*

B.M.

Female. Length 3 lines.—Black: head and thorax closely but not coarsely punctured; thinly sprinkled with short yellow pubescence; the face and cheeks covered with silvery pubescence; the antennae fulvous towards their apex beneath; the mandibles obscurely ferruginous in the middle. A narrow line on the collar, the tubercles, a stripe on the anterior and intermediate femora beneath, and a line on the anterior tibiae outside, yellow; the scutellum and post-scutellum with a minute yellow dot on each side; the squama pale testaceous; the mucro at the base of the metathorax broad, grooved above, the sides parallel and the apex deeply notched. Abdomen finely punctured, the apical margins of the segments with a narrow pale yellow fascia.

The male closely resembles the female, but has the anterior tarsi fulvous, the intermediate and posterior pair obscurely so, and the posterior tibiae are yellow behind; the thoracic mucro is more produced and notched, as in the other sex.

Hab. Brazil (Santarem and Villa Nova). (Coll. H. W. Bates.)

30. *OXYBELUS AURIFRONS.*

Female. Length 3 lines.—Black: the face and cheeks covered with golden pubescence; the flagellum ferruginous, more or less fuscous towards the base above. The collar, tubercles, a spot on each side of the scutellum, the anterior tibiae in front, and a spot at the apex of the intermediate femora behind, black; the claw-joint of the tarsi pale rufo-testaceous, the pulvillus black; the scutellum and post-scutellum with a central longitudinal carina; the squama pale testaceous, the mucro dilated at the apex, hollowed above, deeply emarginate at the tip. Abdomen shining, finely punctured; the first and three following segments with a narrow, wavy, transverse yellow stripe, which is slightly interrupted in the middle, and placed a little before their apical margins.

Hab. Brazil. (Coll. F. Smith.)

31. OXYBELUS CORDATUS.

Oxybelus cordatus, *Spin. Gay's Chili*, vi. 364. 1.

Hab. Chili.

32. OXYBELUS MARGINELLUS.

Oxybelus marginellus, *Spin. Gay's Chili*, vi. 365. 2.

Hab. Chili.

33. OXYBELUS IMPATIENS.

B.M.

Female. Length 3 lines.—Black: the flagellum fulvous beneath; the face has a silvery pubescence, on the vertex and disk of the thorax it is yellow, short, and sparing; a minute spot on the tubercles, another on the tegulæ, and a minute spot at the base of the intermediate and posterior tibiæ, yellow; the anterior tibiæ yellowish-white in front, the claw-joint of the tarsi fulvous; the squama pale testaceous, the mucro linear, grooved above and rounded at the apex. Abdomen: each segment has a narrow pale yellow line on each side, the apical segment immaculate.

Hab. California.

34. OXYBELUS LÆTUS.

Oxybelus lætus, *Say, Bost. Journ.* i. 375. 3.

Hab. North America (Indiana).

35. OXYBELUS EMARGINATUS.

B.M.

Oxybelus emarginatus, *Say, Bost. Journ.* i. 375. 1.

Hab. North America (Indiana).

36. OXYBELUS 4-NOTATUS.

Oxybelus 4-notatus, *Say, Narr. Exped. St. Peter's River, Append.* p. 71; *Bost. Journ.* i. 375. 2.

Hab. Pennsylvania.

Genus 4. CRABRO.

CRABRO

Spheg, pt., *Linn. Faun. Suec.* 411 (1761).

Vespa, pt., *Linn. Faun. Suec.* 415 (1761).

Crabro, pt., *Fabr. Ent. Syst.* ii. 293 (1793).

Pemphredon, pt., *Fabr. Syst. Piez.* 314 (1804).

Rhopalum, *Kirby, Steph. Syst. Cat.* 366 (1829).

- Solenius, Blepharipus, Ceratocolus, Thyreopus, Crossocerus,
 Lindenius, Corynopus, Physoscelis, Dasypsectus, *St. Farg.*
Ann. Soc. Ent. Fr. iii. (1834).
 Entomognathus, *Dahlb. Hym. Europ.* i. 295 (1845).
 Ectemnius, *Dahlb. Hym. Europ.* i. 389 (1845).
 Brachymerus, *Dahlb. Hym. Europ. Synop.* 519 (1845).
 Megapodium, *Dahlb. Hym. Europ.* i. 295.
 Podagrirus, *Spin., Gay's Faun. Chil.* vi. (1854).

Div. 1. *Abdomen petiolated.*

1. CRABRO CLAVIPES. B.M.

Sphex clavipes, *Linn. Faun. Suec.* 411. 1694 ♂; *Syst. Nat.* i. 924. 8.

Crabro crassipes, *Fabr. Ent. Syst. Supp.* 270. 26-7.

Pemphredon crassipes, *Fabr. Syst. Piez.* 315. 3.

Crabro rufiventris, *Panz. Faun. Germ.* 72. 12.

Van d. Lind, Obs. ii. 72. 34.

Shuck. Foss. Hym. 178. 35.

Physoscelis rufiventris, *St. Farg. Ann. Soc. Ent. Fr.* iii. 805. 1 ♂ ♀ (1834); *Hym.* iii. 207. 1.

Rhopalum clavipes, *Dahlb. Hym. Europ.* i. 291. 178.

Wesm. Hym. Foss. Belg. 126. 1.

Hab. Britain; France; Germany; Sweden; Norway.

2. CRABRO TIBIALIS. B.M.

Crabro tibialis, *Fabr. Ent. Syst. Supp.* 271. 27-8.

Panz. Faun. Germ. 83. 14.

Van d. Lind, Obs. ii. 73. 35.

Shuck. Foss. Hym. 177. 34.

Pemphredon tibialis, *Fabr. Syst. Piez.* 315. 4.

Corynopus tibialis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 803. 1 (1834); *Hym.* iii. 205. 1.

Rhopalum tibiale, *Dahlb. Hym. Europ.* i. 288. 177.

Wesm. Hym. Foss. Belg. 127. 3.

Hab. Britain; France; Germany; Denmark; Norway; Finland; Sweden.

3. CRABRO GRACILIS.

Rhopalum gracile, *Wesm. Hym. Foss. Belg.* 126. 2.

Hab. Geneva.

4. CRABRO FLAVO-PICTUS. B.M.

Female. Length 5 lines.—Black and shining: the clypeus

covered with silvery pubescence; the mandibles and scape yellow, the tips of the former ferruginous; the vertex with an impressed oblique channel running from each of the posterior ocelli; the cheeks covered with silvery down. Thorax delicately punctured on the disk; the collar, tubercles, two minute spots on the scutellum and the post-scutellum, yellow; an enclosed shining subcordate space at the base of the metathorax, which has a longitudinal impressed line from the base to the apex; wings hyaline, faintly coloured towards their apical margins, the nervures black; the legs have the tips of the coxæ, trochanters and femora, the anterior and intermediate tibiæ and the base and apex of the posterior pair, yellow; the anterior and intermediate tibiæ have a dark stain behind; the tarsi of a reddish-yellow, with the apical joint rufo-fuscous. Abdomen: the basal petiolated segment yellow, with a longitudinal dark stripe; the second and two following segments have on each side an irregular subovate macula, the apical margin of the fifth yellow, the sixth of a reddish-yellow; beneath, the second and three following segments have an obscure testaceous-yellow waved line at their apical margins.

Hab. Northern India.

5. CRABRO BIPUNCTATUS.

B.M.

Dasyproctus bipunctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 802. 1 (1834); *Hym.* iii. 203. 1.

Dahlb. Hym. Europ. i. 294. 61.

Megapodium Westermanni, *Dahlb. Hym. Europ.* i. 295. 1 (var.?).

Hab. Cape of Good Hope.

Having several specimens of this insect for examination, it is found to vary in colouring as follows:—

Var. β . The scape, collar, tubercles, a spot on the scutellum, two on the second segment of the abdomen, and a transverse line on the fifth segment, pale yellow; the posterior tibiæ black. This is *C. bipunctatus*.

Var. γ . The scape, collar, tubercles, two spots on the second segment of the abdomen, and a transverse line on the fifth, pale yellow; the posterior tibiæ ferruginous; the scutellum immaculate. This appears to be the *Megapodium Westermanni* f Dahlbom.

6. CRABRO WESTERMANNI.

Crabro Westermanni, *Dahlb. Hym. Europ.* i. 295.

Hab. Cape of Good Hope.

7. CRABRO SIMILLIMUS.

Female. Length 4-4½ lines.—Black: the scape yellow, the clypeus covered with silvery pubescence. Thorax: a slightly interrupted yellow line on the collar; the tubercles, tegulæ, tips of the femora, the tibiæ and tarsi, ferruginous; the metathorax rugose, the disk of the thorax finely roughened; the wings fusco-hyaline. Abdomen: the second segment with a transverse spot on each side in the middle, a similar spot on the fourth segment, and a transverse line on the fifth segment, yellow.

The male resembles the female, but is remarkable for having the intermediate and posterior tibiæ and femora fringed beneath with long white pubescence.

Hab. Cape of Good Hope.

This species is closely allied to *C. Westermanni*, but the uniformity of colouring in a number of specimens must be regarded as of specific value.

8. CRABRO FRATER.

Megapodium frater, *Dahlb. Hym. Europ.* i. 295. 2.

Hab. Cape of Good Hope.

9. CRABRO GAYI.

B.M.

Podagritys Gayi, *Spin. Gay's Chili*, vi. 357. 1, *Atlas, Zool.* t. 2, *Hym.* f. 6. 6 a, b, c ♀.

Hab. Chili.

The genus *Podagritys* does not differ from the *Rhopalum* of Kirby, the latter only varying from the type of the genus *Crabro* of Fabricius in having the abdomen petiolated; but in this extensive and eccentric genus every intervening form may be found: the neuration of the wings is the same in the three above-named genera.

10. CRABRO PALLIPES.

Physoscelis pallipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 806. 2 (1834); *Hym.* iii. 209. 2.

Rhopalum pallipes, *Dahlb. Hym. Europ.* i. 294.

Hab. South America (Montevideo).

11. CRABRO BREVINODUS.

Physoscelis brevinodus, *Spin. Gay's Chili*, vi. 361. 2, *Atlas, Hym.* t. 2. f. 8 ♀.

Hab. Chili.

12. CRABRO LONGINODUS.

Physoscelus longinodus, *Spin. Gay's Chili*, vi. 359. 1, *Atlas, Hym.* t. 2. f. 7 ♂.

Hab. Chili.

13. CRABRO CRASSINODUS.

Physoscelus crassinodus, *Spin. Gay's Chili*, vi. 362. 3, *Atlas, Hym.* t. 2. f. 9 ♂.

Hab. Chili.

14. CRABRO TRICOLOR.

B.M.

Male. Length 5 lines.—Black: the scape yellow; the clypeus covered with silvery pubescence; the second joint of the flagellum slightly produced at its apex beneath; an oblique depression on the side of each of the posterior ocelli. Thorax slightly shining, the sides with a fine short glittering pubescence; the anterior and intermediate legs yellow, with the extreme base of the femora black; the tips of the posterior femora yellow; the tibiæ and tarsi wanting, probably yellow; the wings slightly coloured, beautifully iridescent, their extreme base yellow. Abdomen: the apex of the first segment, the second segment, and base of the third, red; the apical segment punctured and sprinkled with pale hairs.

Hab. Tasmania.

Div. 2. *Abdomen sessile.*

* *Anterior tibiæ of the males dilated into abroad flattened plate.*

15. CRABRO CRIBRARIUS.

B.M.

Vespa cribraria, *Linn. Faun. Suec.* 1675 ♂.

Sphex cribraria, *Linn. Syst. Nat.* i. 945. 23.

Sulz. Gesch. Ins. t. 27. f. 6 ♂.

Schrank, Ins. Austr. 384. 779.

Christ. Hym. 281. t. 27. f. 1.

Guêpe ichneumon, *De Geer, Ins.* ii. 810. t. 28. f. 1–5 ♂.

Sphex patellaria, *Schreb. Naturf.* 20. 95. 1.

Crabro cribrarius, *Fabr. Ent. Syst.* ii. 297. 14; *Syst. Piez.* 311. 16.

Panz. Faun. Germ. 15. 18 ♂. 15. 19 ♀.

Latr. Hist. Nat. xiii. 323. 1.

Duméril, Consid. gén. t. 31. f. 3.

Spin. Ins. Lig. ii. 178. 13.

Van d. Lind, Obs. ii. 40. 1.

Shuck. Foss. Hym. 126. 1.

Crabro cribrarius, Zett. *Ins. Lapp.* 444. 7.

Dahlb. Hym. Europ. i. 353. 231.

Wesm. Hym. Foss. Belg. 146. 25.

Thyreopus cribrarius, St. Farg. *Ann. Soc. Ent. Fr.* iii. 752. 1;

Hym. iii. 158. 1.

Hab. Britain, and throughout Europe.

16. CRABRO PATELLATUS.

B.M.

Crabro patellatus, Panz. *Faun. Germ.* 46. 4 ♂.

Van d. Lind, Obs. ii. 43. 3 ♂ ♀.

Shuck. Foss. Hym. 128. 2.

Dahlb. Hym. Europ. i. 356. 232.

Wesm. Hym. Foss. Belg. 145. 24.

Crabro peltatus, Fabr. *Syst. Piez.* 311. 15.

Crabro clypeatus, Fabr. *Ent. Syst.* ii. 297. 15.

Crabro dentipes, Panz. *Faun. Germ.* 46. 9 ♀.

Thyreopus patellatus, St. Farg. *Ann. Soc. Ent. Fr.* iii. 756. 3;

Hym. iii. 161. 3.

Hab. Britain; Germany; France; Belgium; Sweden.

17. CRABRO INTERRUPTUS.

Thyreopus interruptus, St. Farg. *Ann. Soc. Ent. Fr.* iii. 755. 2 ♂;

Hym. iii. 160. 2.

Crabro interruptus, *Dahlb. Hym. Europ.* i. 359. 233.

Hab. France.

This in all probability is the male of *C. chrysarginus*.

18. CRABRO CETRATUS.

B.M.

Crabro cetratus, Shuck. *Foss. Hym.* 131. 4.

Dahlb. Hym. Europ. i. 337. 221.

Wesm. Hym. Foss. Belg. 133. 10.

Crabro dilatatus, Herr. Schöff. *Faun. Germ.* 181. 54.

Hab. Britain; Germany; Sweden; Norway; Finland.

19. CRABRO PTEROTUS.

B.M.

Crabro pterotus, Panz. *Faun. Germ.* 83. 16 ♂. 83. 17 ♀.

Fabr. Syst. Piez. 311. 17.

Van d. Lind, Obs. ii. 43. 4.

Dahlb. Hym. Europ. i. 360. 234.

Wesm. Hym. Foss. Belg. 145. 23.

Thyreopus pterotus, St. Farg. *Ann. Soc. Ent. Fr.* iii. 760. 5 ♂;

Hym. iii. 165. 5.

Ceratocolus reticulatus, *St. Farg. Ann. Soc. Ent. Fr.* 747. 6 ♀?
Hym. iii. 152. 6.

Hab. France; Germany; Austria; Sweden.

20. CRABRO SCUTATUS.

B.M.

Crabro scutatus, *Fabr. Mant.* i. 296. 15 ♂; *Ent. Syst.* ii. 298. 16.
Panz. Faun. Germ. 15. 22.

Oliv. Encycl. Méth. vi. 515. 17.

Van d. Lind, Obs. ii. 44. 5.

Shuck. Foss. Hym. 129. 3 ♂ ♀.

Dahlb. Hym. Europ. i. 329. 216.

Wesm. Hym. Foss. Belg. 135. 13.

Vespa scutata, *Gmelin, Syst. Nat.* i. pt. 5. 2763. 116 ♂.

Sphex palmaria, *Schreb. Naturf.* xx. 100. 6. t. 2. f. 9 ♂.

Crossocerus scutatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 764. 1 ♂
(1834); *Hym.* iii. 168. 1.

Hab. Britain; France; Germany; Belgium.

21. CRABRO LATIPES.

B.M.

Male. Length 4 lines.—Black: the head a little wider than the thorax, much narrowed behind the eyes; the stemmata placed in a curve backwards on the vertex; the clypeus yellow, with a black carina in the middle; the mandibles with a yellow stripe outside; the scape white, with a black line behind, broad and narrowed at the base; the flagellum subfusiform, concave beneath, and serrated on the exterior. Thorax: the metathorax rugose; the wings fulvo-hyaline and iridescent, the nervures rufo-testaceous; the anterior legs have the trochanters a little dilated and flattened beneath, and of a very pale yellow colour; the femora pale yellow, broadly dilated, widest at their apex, at the base furnished with two incurved acute teeth; the tibiæ dilated into large oblong concavo-convex plates, the lower posterior angle furnished with an acute spine, the anterior margin pale yellow, behind which it is entirely of a dusky brown, with two or three longitudinal paler lines, at the base having a few narrow whitish streaks; the intermediate femora with a yellow stripe behind; the tibiæ yellow, with a black stain at the base beneath; the tarsi yellow; the posterior legs have the tibiæ and basal joint of the tarsi yellow outside. Abdomen: a pale yellow subinterrupted fascia on the first and three following segments, that on the fifth continuous; the sixth segment with an oblong spot on each side.

Hab. Nova Scotia. (Coll. Lieut. Redman.)

**** Anterior tarsi with one or more of the basal joints dilated.**

22. CRABRO CLYPEATUS.

B.M.

Sphex clypeata, Linn. *Syst. Nat.* i. 945. 24 ♂.

Schrank, Ins. Austr. 386. 780.

Christ. Hym. 285. t. 27. f. 5.

Crabro clypeatus, Fabr. *Syst. Ent.* 375. 7 ♂; *Ent. Syst.* ii. 297. 15; *Syst. Piez.* 312. 18.

Rossi, Faun. Etrus. ii. 90. 880.

Oliv. Encycl. Méth. vi. 515. 16.

Latr. Hist. Nat. xiii. 323. 2; *Novo. Dict.* 2nd ed. 8: 358.

Crabro vexillatus, Panz. *Faun. Germ.* 46. 5 ♂.

Illig. Faun. Etrus. ii. 149.

Van d. Lind, Obs. ii. 45. 6 ♂ (nec ♀).

Shuck. Foss. Hym. 132. 5 ♂.

Dahlb. Hym. Europ. i. 375. 212 ♂ ♀.

Crabro vexillatus, Wesm. *Hym. Foss. Belg.* 147. 27.

Crabro lapidarius, Fabr. *Syst. Piez.* 309. 6 ♀.

Van d. Lind, Obs. ii. 55. 14.

Smith, Cat. Brit. Hym. 120.

Thyreopus clypeatus, St. Farg. *Ann. Soc. Ent. Fr.* iii. 758. 4 ♂.

Solenius lapidarius, St. Farg. *Ann. Soc. Ent. Fr.* iii. 721. 8 ♀; *Hym.* iii. 117. 1.

Hab. Britain; France; Germany; Italy; Sweden; Norway; Finland.

A comparison of specimens with the type in the Linnæan Cabinet convinces me of the identity of the British insect with the Swedish one, which has the name *clypeata* attached to it in the handwriting of Linnæus.

23. CRABRO PALMIPES.

B.M.

Sphex palmipes, Linn. *Syst. Nat.* i. 944. 20 ♂.

Gmelin, i. 2730. 20.

Vill. Entom. iii. 231. 31.

Crabro palmipes, Van d. Lind, *Obs.* ii. 47. 8.

St. Farg. Ann. Soc. Ent. Fr. iii. 765. 2; *Hym.* iii. 169. 2.

Dahlb. Hym. Europ. i. 332. 217.

Wesm. Hym. Foss. Belg. 135. 14.

Crabro tarsatus, Shuck. *Foss. Hym.* 163. 23.

Crabro pusillus, Herr. Schöff. *Faun. Germ.* 181. 55. t. 24, & t. 23.

Hab. Britain; France; Germany; Belgium; Sweden.

24. CRABRO LAPORTÆI.

Crabro Laportæi, *St. Farg. Ann. Soc. Ent. Fr.* iii. 712. 14 ;
Hym. iii. 115. 14.

Hab. France.

25. CRABRO SUBTERRANEUS.

Crabro subterraneus, *Fabr. Ent. Syst.* ii. 295. 7 ; *Syst. Piez.* 309. 8.

Rossi, Faun. Etrus. Illig. ed. ii. 151. 883.

Van d. Lind, Obs. ii. 46. 7.

Dahlb. Hym. Europ. i. 370. 240 ; *Exam. Crabr.* 71. 20 ;

Dispos. Meth. Spec. Hym. 15. 109.

Wesm. Hym. Foss. Belg. 146. 26.

Ceratocolus philanthoides, *St. Farg. Ann. Soc. Ent. Fr.* iii. 742. 3 ;
Hym. iii. 147. 3.

Hab. Britain ; Italy ; France ; Germany ; Belgium ; Finland.

*** *Joints of the antennæ more or less emarginate, sometimes produced beneath, forming teeth ; the legs simple.*

26. CRABRO ALATUS.

Ceratocolus alatus, *Panz. Faun. Germ.* 46. 6.

St. Farg. Ann. Soc. Ent. Fr. iii. 750. 10 ♂ ; *Hym.* iii. 156. 10.

Dahlb. Hym. Europ. i. 372. 241.

Hab. France ; Germany.

27. CRABRO AURATUS.

Solenius dives, *St. Farg. Ann. Soc. Ent. Fr.* iii. 716. 4 ; *Hym.* iii. 122. 5.

Dahlb. Hym. Europ. i. 387. 262.

Hab. France.

28. CRABRO CEPHALOTES.

B.M.

Crabro cephalotes, *Fabr. Syst. Piez.* 308. 5.

Panz. Faun. Germ. 62. 16.

Van d. Lind, Obs. ii. 55. 13.

Shuck. Foss. Hym. 135. 7.

Dahlb. Hym. Europ. i. 408. 273.

St. Farg. Ann. Soc. Ent. Fr. iii. 697. 1 ; *Hym.* iii. 100. 1.

Wesm. Hym. Foss. Belg. 151. 33.

Crabro sinuatus, *Fabr. Syst. Piez.* 310. 12.

Crabro vespiformis, *Van d. Lind, Obs.* ii. 54. 12.

Hab. Britain; France; Germany; Belgium; Norway; Sweden; Denmark.

29. CRABRO CHRYSOSTOMUS.

B.M.

Crabro fossorius, *Panz. Faun. Germ.* 72. 11? (nec *Linn.*) ♀.

Van d. Lind, Obs. ii. 51. 10 ♂ ♀ (nec *Linn.*).

Crabro lapidarius, *Panz. Faun. Germ.* 90. 12 (nec *Fabr.*) ♂.

Dahlb. Hym. Europ. 405. 272.

Wesm. Hym. Foss. Belg. 151. 32.

Crabro chrysostomus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 704. 7 ♀;
Hym. iii. 107. 7.

Herr. Schäff. Faun. Germ. 181. 22. t. 13 ♂.

Crabro xylurgus, *Shuck. Foss. Hym.* 139. 9.

Hab. Britain; France; Germany; Belgium; Austria; Sicily; Norway; Sweden; Lapland; Finland.

30. CRABRO COMPTUS.

Crabro comptus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 705. 8; *Hym.* iii. 108. 8.

Dahlb. Hym. Europ. i. 385. 254.

Hab. France.

Both Dahlbom and Wesmael regard this as the male of *C. chrysostomus*; but, as St. Fargeau does not mention the deep emargination of the third and fourth joints of the flagellum, the synonym appears doubtful.

31. CRABRO DIVES.

Crabro dives, *St. Farg. Ann. Soc. Ent. Fr.* iii. 716. 4 ♂ ♀; *Hym.* iii. 122. 5.

Herr. Schäff. Faun. Germ. 181. 26. t. 17, 18.

Dahlb. Hym. Europ. i. 396. 269.

Wesm. Hym. Foss. Belg. 150. 30.

Crabro alatus, *Dahlb. Exam. Crabr.* 85. 23. t. 5 ♂; *Dispos.* 15. 111.

Hab. France; Asia Minor; Germany; Belgium; Sweden.

32. CRABRO FUMIPENNIS.

Solenius fuscipennis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 714. 1;
Hym. iii. 120. 2. (See Spec. 144.)

Dahlb. Hym. Europ. i. 386. 259.

Hab. France.

33. CRABRO LINDENIUS.

B.M.

Crabro Lindenius, *Shuck. Foss. Hym.* 143. 10.Crabro interruptus, *Dahlb. Hym. Europ.* i. 418. 275.Crabro striatus, *Wesm. Hym. Foss. Belg.* 156. 35.*Dahlb. Hym. Europ.* i. 321. 204.*Hab.* France; Belgium; Austria; Sweden; Lapland.

The synonymy of this species is apparently very much confused. Dahlbom considers it to be identical with the *Crabro striatus* of St. Fargeau: that it cannot be so is proved by the position of the stemmata, in a curve; in the genus *Crabro* of St. Fargeau they are in a triangle. Since the remarkable striation of the mesothorax, transversely in front and longitudinally behind, is not mentioned in the descriptions of St. Fargeau's *Crabro*, *Ceratocolus*, or *Crossocerus striatus*, it is impossible to adopt either of the species as identical with *C. Lindenius*.

34. CRABRO FASCIATUS.

Ceratocolus fasciatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 746. 5 ♂;*Hym.* iii. 151. 5.*Dahlb. Hym. Europ.* i. 382. 247.*Hab.* France.

35. CRABRO FOSSORIUS.

Sphex fossoria, *Linn. Faun. Suec.* no. 1662; *Syst. Nat.* i. 946. 32.*Vill. Ent.* iii. 236. 39.*Crabro fossorius*, *Dahlb. Hym. Europ.* i. 422. 276.*Zett. Ins. Lapp.* 442. 1.*Solenius fossorius*, *St. Farg. Ann. Soc. Ent. Fr.* iii. 725. 10;*Hym.* iii. 130. 10?*Hab.* France; Austria; Germany; Sweden; Finland; Lapland.

36. CRABRO GRANDIS.

Solenius grandis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 718. 5; *Hym.* iii. 124. 6 ♀ (var. *C. fossorius*?).*Hab.* France.

37. CRABRO LARVATUS.

B.M.

Crabro larvatus, *Wesm. Hym. Foss. Belg.* 148. 29.*Hab.* Britain; Belgium.

38. CRABRO IMPRESSUS.

Ceratocolus punctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 749. 9 ♂ ♀;
Hym. iii. 154. 9.

Dahlb. Hym. Europ. i. 388. 263.

Hab. Vienna.

39. CRABRO LITURATUS.

Crabro lituratus, *Panz. Faun. Germ.* 90. 13 ♀.

St. Farg. Ann. Soc. Ent. Fr. iii. 702. 5; *Hym.* iii. 105. 5.

Hab. Britain; France.

40. CRABRO MAURUS.

Ceratocolus maurus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 153. 7 ♀;
Hym. iii. 153. 7.

Dahlb. Hym. Europ. i. 382. 248.

Hab. Vienna.

41. CRABRO OCTAVO-NOTATUS.

Solenius octavo-notatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 719. 6;
Hym. iii. 125. 7.

Dahlb. Hym. Europ. i. 388. 263.

Hab. France.

42. CRABRO ORNATUS.

Crabro ornatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 709. 10 ♀; *Hym.*
 iii. 112. 10.

Dahlb. Hym. Europ. i. 321. 203.

Hab. France.

43. CRABRO PHILANTHOIDES.

Crabro philanthoides, *Panz. Faun. Germ.* 83. 15.

Fabr. Syst. Piez. 309. 11.

Hab. Germany.

44. CRABRO PETIOLATUS.

Solenius petiolatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 726. 11;
Hym. iii. 131. 11.

Dahlb. Hym. Europ. i. 388. 265.

Hab. France.

45. CRABRO PUNCTATUS.

Solenius punctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 710. 7 ♂;
Hym. iii. 126. 8.

Dahlb. Hym. Europ. i. 383. 250.

Hab. France.

46. CRABRO RETICULATUS.

Ceratocolus reticulatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 747. 6 ♂;
Hym. iii. 152. 6.

Crabro pterotus, *Van d. Lind, Obs.* ii. 43. 4.

Dahlb. Hym. Europ. i. 360. 234.

Hab. France.

47. CRABRO SEXCINCTUS.

B.M.

Crabro sexcinctus, *Fabr. Ent. Syst.* ii. 295. 9 ?

Panz. Faun. Germ. 64. 13 ?

Van d. Lind, Obs. ii. 55. 13 ♂ (nec ♀).

Herr. Schöff. Faun. Germ. 181. 18.

Shuck. Foss. Hym. 137. 8 ♂.

Wesm. Hym. Foss. Belg. 154. 34.

Hab. Britain; Germany; Belgium.

48. CRABRO VAGUS.

Sphex vaga, *Linn. Faun. Suec.* no. 1661; *Syst. Nat.* i. 946. 36.
Vill. Ent. iii. 238. 44.

Schöff. Icon. Ins. Ratisb. t. 94. f. 4, 5, & t. 127. f. 6.

Crabro vagus, *Fabr. Syst. Ent.* 375. 8; *Spec. Ins.* i. 471. 10;

Mant. i. 296. 16; *Ent. Syst.* ii. 298. 17; *Syst. Piez.* 313. 22.

Panz. Faun. Germ. 46. 10.

Rossi, Faun. Etrus. ii. 91. 881.

Oliv. Encycl. Méth. vi. 515. 18.

Schrank, Faun. Boic. ii. 338. 2188.

Latr. Hist. Nat. xiii. 324. 4.

Van d. Lind, Obs. ii. 57. 16.

Shuck. Foss. Hym. 145. 11.

Zett. Ins. Lapp. 442. 2.

Dahlb. Hym. Europ. i. 392. 268.

Wesm. Hym. Foss. Belg. 147. 28.

Solenius vagus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 722. 9; *Hym.*
 iii. 147. 28.

Hab. Britain, and throughout Europe.

49. CRABRO VESPIFORMIS.

B.M.

Crabro vespiformis, *Panz. Faun. Germ.* 53. 14 ?*St. Farg. Ann. Soc. Ent. Fr.* iii. 701. 4; *Hym.* iii. 104. 4.*Hab.* France.

50. CRABRO ZIEGLERI.

Ceratocolus punctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 748. 8 ♀;*Hym.* iii. 154. 8.*Dahlb. Hym. Europ.* i. 383. 249.*Hab.* Vienna.

51. CRABRO ZONATUS.

Crabro zonatus, *Panz. Faun. Germ.* 47. 7 ♂ (var. *C. sexcinctus*?).*St. Farg. Ann. Soc. Ent. Fr.* iii. 700. 3; *Hym.* iii. 103. 3.*Hab.* Paris; Germany.

**** *Joints of the antennæ simple; the legs simple. The opposite sex of many of the species not known.*

52. CRABRO ANXIUS.

B.M.

Crabro exiguus, *Shuck. Foss. Hym.* 174. 32 (nec *Van d. Lind*).*Dahlb. Hym. Europ.* i. 326. 214.*Crabro anxius*, *Wesm. Hym. Foss. Belg.* 137. 16 ♂ ♀.*Hab.* Britain; Belgium; Sweden.

53. CRABRO ALBILABRIS.

B.M.

Crabro albilabris, *Fabr. Ent. Syst.* ii. 302. 31.*Van d. Lind, Obs.* ii. 55. 28 ♂ ♀.*Shuck. Foss. Hym.* 171. 30.*Zett. Ins. Lapp.* 444. 9.*Crabro leucostoma*, *Panz. Faun. Germ.* 15. 24; *Krit. Revis.* ii. 185.*Pemphredon albilabris*, *Fabr. Syst. Piez.* 316. 8.*Lindenius albilabris*, *St. Farg. Ann. Soc. Ent. Fr.* iii. 795. 4;*Hym.* iii. 197. 4.*Dahlb. Hym. Europ.* i. 300. 182.*Wesm. Hym. Foss. Belg.* 124. 1.*Crabro canescens*, *Dahlb. Exam. Crabr. Scand.* 23. 2. t. 1 ♀.*Hab.* Britain; France; Italy; Germany; Belgium; Saxony; Denmark; Sweden; Norway; Lapland.

The species included in the genus *Lindenius* of St. Fargeau only differ from the rest of the genus *Crabro* in having the ocelli

in curve, and the mandibles not notched at the base; but the latter character is common to many species of other divisions of the genus: an examination of a large number of species from other countries shows that the former character is evanescent, the ocelli are disposed in every form between an angle and a slight curve.

54. CRABRO BIMACULATUS.

B.M.

Crossocerus bimaculatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 788. 25 ♂; *Hym.* iii. 191. 25.

Crabro geniculatus, *Shuck. Foss. Hym.* 169. 28.

Crabro bimaculatus, *Dahlb. Hym. Europ.* i. 310. 190.

Hab. Britain; France; Germany; Austria.

55. CRABRO BREVIS.

B.M.

Crabro brevis, *Van d. Lind, Obs.* ii. 70. 32 ♂ ♀.

Shuck. Foss. Hym. 175. 33.

Lindenius brevis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 800. 10; *Hym.* 202. 10.

Entomognathus brevis, *Dahlb. Hym. Europ.* i. 295. 179.

Wesm. Hym. Foss. Belg. 124. 1.

Hab. Britain; France (Paris); Germany; Italy; Belgium; Austria; Sweden.

This species only differs from the majority of the genus in being of a shorter and more robust form, and in having a deep notch, or rather an obtuse tooth, at the base of the mandibles; these differences cannot be regarded as of more than specific value.

56. CRABRO CAPITOSUS.

B.M.

Crabro capitosus, *Shuck. Foss. Hym.* 159. 20 ♀.

Dahlb. Hym. Europ. i. 317. 198 ♂ ♀.

Wesm. Hym. Foss. Belg. 129. 3.

Crabro lævipēs, *Herr. Schüff. Faun. Germ.* 179. 22. p. 43.

Hab. Britain; Germany; Sweden.

57. CRABRO DIMIDIATUS.

B.M.

Crabro dimidiatus, *Fabr. Ent. Syst.* ii. 298. 19 ♀; *Syst. Piez.* 313. 24.

Van d. Lind, Obs. ii. 58. 20 ♂ ♀.

Shuck. Foss. Hym. 151. 14.

Dahlb. Hym. Europ. i. 345. 228.

Crabro serripes, *Panz. Faun. Germ.* 46. 8.

Herr. Schöff. Faun. Germ. 179. 20.

Wesm. Hym. Foss. Belg. 128. 1.

Blepharipus pauperatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 733. 5 ;
Hym. iii. 138. 5.

Hab. Britain ; France ; Germany ; Norway ; Sweden.

58. CRABRO DIVERSIPES.

B.M.

Crabro pubescens, *Shuck. Foss. Hym.* 165. 25 ♂.

Dahlb. Hym. Europ. i. 311. 191.

Crabro diversipes, *Herr. Schöff. Faun. Germ.* 181. 49 ♂ ♀.

Wesm. Hym. Foss. Belg. 134. 12.

Hab. Britain ; Belgium.

59. CRABRO ELONGATUS.

Crossocerus elongatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 790. 27
♂ ♀ ; *Hym.* iii. 193. 27.

Hab. Belgium.

60. CRABRO EXIGUUS.

B.M.

Crabro exiguus, *Van d. Lind, Obs.* ii. 72. 33 ♀.

Shuck. Foss. Hym. 174. 32 ♀, not the ♂.

Wesm. Hym. Foss. Belg. 141. 21 ♂ ♀.

Hab. Britain.

61. CRABRO HYALINUS.

Crabro hyalinus, *Shuck. Foss. Hym.* 161. 21.

Hab. Britain.

62. CRABRO INTERSTINCTUS.

Crabro interstinctus, *Smith, Zool.* ix. *Append.* p. cxxvi.

Hab. Britain. (Coll. F. Smith.)

63. CRABRO LEUCOSTOMA.

Sphex leucostoma, *Linn. Faun. Suec.* no. 1663 ; *Syst. Nat.* i.
946. 36.

Villers, Entom. iii. 237. 43.

Crabro leucostoma, *Fabr. Syst. Ent.* 376. 13 ; *Spec. Ins.* i. 472.
17 ; *Mant.* i. 297. 27 ; *Ent. Syst.* ii. 301. 27.

Oliv. Encycl. Méth. vi. 518. 35.

Van d. Lind, Obs. ii. 61. 24.

Crabro leucostoma, *Shuck. Foss. Hym.* 153. 15.

Zett. Ins. Lapp. 444. 9.

Dahlb. Hym. Europ. i. 341. 223.

Herr. Schöff. Faun. Germ. 48. 56.

Wesm. Hym. Foss. Belg. 133. 11.

Pemphredon leucostoma, *Fabr. Syst. Piez.* 314. 1.

Crossocerus leucostoma, *St. Farg. Ann. Soc. Ent. Fr.* iii. 777. 13;

Hym. iii. 180. 13.

Crabro bidens, *Halid. Ent. Mag.* i. 516 ♂.

Hab. Britain; France; Germany; Belgium; Sweden; Lapland.

64. CRABRO LUTEIPALPIS.

B.M.

Crossocerus luteipalpis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 785.

23 ♂; *Hym.* iii. 188. 22.

Crabro elongatulus, *Van d. Lind, Obs.* ii. 62. 25 ♂.

Dahlb. Hym. Europ. i. 315. 196.

Shuck. Foss. Hym. 154. 16.

Wesm. Hym. Foss. Belg. 138. 18.

Crabro luteipalpis, *Shuck. Foss. Hym.* 155. 17.

Hab. Britain; France; Germany; Belgium; Norway.

65. CRABRO OBLIQUUS.

B.M.

Crabro obliquus, *Shuck. Foss. Hym.* 167. 26 ♂ ♀.

Dahlb. Hym. Europ. i. 315. 195.

Hab. Britain.

66. CRABRO PODAGRICUS.

B.M.

Crabro podagricus, *Van d. Lind, Obs.* ii. 60. 23 ♀.

Shuck. Foss. Hym. 157. 19 ♂ ♀.

Wesm. Hym. Foss. Belg. 130. 5.

Crossocerus podagricus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 786. 24;

Hym. iii. 189. 23.

Crabro vicinus, *Dahlb. Hym. Europ.* i. 333. 218.

Hab. Britain; France; Germany; Belgium; Sweden.

67. CRABRO PROXIMUS.

Crabro proximus, *Shuck. Foss. Hym.* 156. 18.

Hab. Britain.

68. CRABRO PANZERI.

B.M.

Crabro Panzeri, *Van d. Lind, Obs.* ii. 67. 29 ♂ ♀.

Shuck. Foss. Hym. 173. 31.

Lindenius Panzeri, *St. Farg. Ann. Soc. Ent. Fr.* iii. 798. 7; *Hym.* iii. 201. 8.

Dahlb. Hym. Europ. i. 302. 183.

Wesm. Hym. Foss. Belg. 124. 1.

Hab. Britain; France; Germany; Belgium; Denmark; Sweden; Finland.

69. CRABRO 4-MACULATUS.

B.M.

Crabro 4-maculatus, *Fabr. Ent. Syst.* ii. 294. 4; *Syst. Piez.* 308. 4.

Spin. Ins. Ligur. fasc. iii. 177. 9.

Dahlb. Hym. Europ. i. 351. 230 ♂ ♀.

Wesm. Hym. Foss. Belg. 139. 19.

Crabro mediatum, *Fabr. Syst. Piez.* 312. 20.

Crabro subpunctatus, *Van d. Lind, Obs.* ii. 58. 19 (nec *Rossi*).

Shuck. Foss. Hym. 147. 12.

Crossocerus subpunctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 766. 3;

Hym. iii. 170. 3 ♂ ♀.

Blepharipus pauperatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 733. 5;

Hym. iii. 130. 5.

Hab. Britain; France; Germany; Italy; Belgium; Denmark; Sweden.

70. CRABRO SCUTELLARIS.

Crabro scutellaris, *Smith, Cat. Brit. Hym. Append.* p. 121.

Hab. Britain. (Coll. F. Smith.)

71. CRABRO SHUCKARDI.

B.M.

Crabro exiguum, *Shuck. Foss. Hym.* 174. 32 (nec *Van d. Lind*), the ♂ only.

Hab. Britain.

72. CRABRO SIGNATUS.

B.M.

Crabro signatus, *Panz. Faun. Germ.* 53. 15 ♀.

Jurine, Hym. 212.

Herr. Schöff. Faun. Germ. 179. 20 & 21.

Wesm. Hym. Foss. Belg. 128. 2 ♂ ♀.

Crabro dimidiatus, *Van d. Lind, Obs.* ii. 60. 20.

Hab. Britain; Germany; Belgium.

73. CRABRO TRANSVERSALIS.

B.M.

Crabro transversalis, *Shuck. Foss. Hym.* 162. 22 ♂.

Dahlb. Hym. Europ. i. 317. 197.

Hab. Britain.

74. CRABRO VAGABUNDUS.

B.M.

Crabro vagabundus, *Panz. Faun. Germ.* 53. 16 ♂.

Van d. Lind, Obs. ii. 57. 18.

Shuck. Foss. Hym. 149. 30.

Wesm. Hym. Foss. Belg. 132. 8.

Blepharipus mediatum, *St. Farg. Ann. Soc. Ent. Fr.* iii. 735. 6 ;

Hym. iii. 140. 6 ♂ ♀.

Blepharipus 5-maculatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 738.

9 ♂ (var.); *Hym.* iii. 144. 9.

Herr. Schöff. Faun. Germ. 179. 39 ♂ ♀.

Crabro subpunctatus, *Dahlb. Hym. Europ.* i. 349. 229.

Crabro 4-cinctus, *Dahlb. Hym. Europ.* i. 526. 32 ♀ var.?

Hab. Britain; France; Germany; Belgium; Sweden; Nova Scotia.

75. CRABRO VARIUS.

Crossocerus varius, *St. Farg. Ann. Soc. Ent. Fr.* iii. 775. 12 ;

Hym. iii. 179. 12.

Herr. Schöff. Faun. Germ. 181. 48. t. 23.

Dahlb. Hym. Europ. i. 322. 205.

Crabro spinipectus, *Shuck. Foss. Hym.* 163. 23 ♂ ♀.

Dahlb. Hym. Europ. i. 327. 215 (not var. *b* & *c*).

Crabro varius, *Wesm. Hym. Foss. Belg.* 137. 15.

Hab. Britain; France; Germany; Belgium.

Wesmael refers the *C. spinipectus* ♀ to *C. palmipes*, which it certainly is not; the female of *C. palmipes* has been taken in this country since the publication of Shuckard's work, who did not know that sex, which, as Wesmael points out, differs amongst other particulars, in having black spines at the apex of the anterior tibiae. *Crabro spinipectus* appears to be correctly reduced to a synonym of the *C. varius*; both sexes have all the spines at the apex of the tibiae yellow.

76. CRABRO WALKERI.

B.M.

Crabro Walkeri, *Shuck. Foss. Hym.* 170. 29 ♂.

Wesm. Hym. Foss. Belg. 140. 20.

Hab. Britain; France; Belgium; Sweden.

77. CRABRO WESMAELI.

B.M.

Crabro Wesmaeli, *Van d. Lind, Obs.* ii. 63. 26 ♂ ♀.

Shuck. Foss. Hym. 164. 24.

Dahlb. Hym. Europ. i. 312. 192.

Wesm. Hym. Foss. Belg. 137. 17.

Crossocerus Wesmaeli, *St. Farg. Ann. Soc. Ent. Fr.* iii. 783. 20 ;
Hym. iii. 186. 19.

Hab. Britain ; France ; Germany ; Belgium.

78. CRABRO AFFINIS.

Crossocerus affinis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 781. 18 ♀ ;
Hym. iii. 184. 17.

Dahlb. Hym. Europ. i. 324. 209.

Hab. France.

79. CRABRO ARMATUS.

Crabro armatus, *Van d. Lind, Obs.* ii. 71. 31.

Lindenius armatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 793. 2 ; *Hym.*
 iii. 195. 2.

Dahlb. Hym. Europ. i. 299. 181.

Wesm. Hym. Foss. Belg. 125. 4.

Hab. France ; Belgium.

80. CRABRO AMBIGUUS.

Crabro ambiguus, *Dahlb. Dispos. Meth. Spec. Hym.* i. 14. 95 ;
Hym. Europ. i. 336. 220.

Wesm. Hym. Foss. Belg. 131. 5.

Crossocerus gonager, *St. Farg. Hym.* iii. 188. 21 ?

Dahlb. Hym. Europ. i. 325. 212.

Hab. Geneva ; Versailles ?

81. CRABRO APHIDIUM.

Crossocerus Aphidium, *St. Farg. Ann. Soc. Ent. Fr.* iii. 789. 27 ♀ ;
Hym. iii. 192. 26.

Crabro Aphidium, *Dahlb. Hym. Europ.* i. 308. 189.

Herr. Schöff. Faun. Germ. 181. 62.

Hab. France.

82. CRABRO APICALIS.

Lindenius apicalis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 794. 3 ♀ ;
Hym. iii. 196. 3.

Dahlb. Hym. Europ. i. 307. 188.

Hab. France.

83. CRABRO ANNULIPES.

Blepharipus annulipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 729. 2 ♀;

Hym. iii. 134. 2.

Dahlb. Hym. Europ. i. 320. 201.

Hab. France.

84. CRABRO BINOTATUS.

Crossocerus binotatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 175. 7 ♀;

Hym. iii. 175. 7.

Hab. France.

85. CRABRO FARGEII.

Ceratocolus striatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 744. 4;

Hym. iii. 149. 4.

Hab. Paris.

86. CRABRO FLAVIPES.

Crabro flavipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 699. 2; *Hym.*

iii. 102. 2.

Dahlb. Hym. Europ. i. 384. 253.

Hab. France.

87. CRABRO INTRICATUS.

Crossocerus striatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 776. 11 ♀.

Dahlb. Hym. Europ. i. 381. 245.

Hab. France.

88. CRABRO LUTEIPES.

Blepharipus flavipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 736. 7;

Hym. iii. 142. 7.

Dahlb. Hym. Europ. i. 384. 253.

Hab. France.

89. CRABRO LEFEBVREI.

Crossocerus Lefebvrei, *St. Farg. Ann. Soc. Ent. Fr.* iii. 174. 6 ♂;

Hym. iii. 174. 6.

Dahlb. Hym. Europ. i. 384. 252.

Hab. France.

90. CRABRO LEPELETIERI.

Crossocerus striatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 778. 11 ;
Hym. iii. 178. 11.

Crossocerus striatulus, *Dahlb. Hym. Europ.* i. 321. 204.

Hab. France.

91. CRABRO MORIO.

Crossocerus morio, *St. Farg. Ann. Soc. Ent. Fr.* iii. 781. 17 ;
Hym. iii. 183. 16.

Dahlb. Hym. Europ. i. 323. 208.

Hab. France.

92. CRABRO NIGER.

Crossocerus niger, *St. Farg. Ann. Soc. Ent. Fr.* iii. 782. 19 ♂ ;
Hym. iii. 185. 18.

Dahlb. Hym. Europ. i. 324. 210.

Hab. France.

93. CRABRO NIGRITUS.

Blepharipus nigrita, *St. Farg. Ann. Soc. Ent. Fr.* iii. 134. 1 ♀ ;
Hym. iii. 134. 1.

Dahlb. Hym. Europ. i. 320. 200.

Hab. France.

94. CRABRO DECORATUS.

Crossocerus ornatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 774. 10 ♀ ;
Hym. iii. 177. 10. (See Spec. 42.)

Dahlb. Hym. Europ. i. 385. 255.

Hab. France.

95. CRABRO OVALIS.

Crossocerus ovalis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 780. 16.

Dahlb. Hym. Europ. i. 323. 207.

Hab. France.

96. CRABRO PALLIDIPALPIS.

B.M.

Crossocerus pallidipalpis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 779.
15 ; *Hym.* iii. 182. 15.

Crabro pallidipalpis, *Dahlb. Hym. Europ.* i. 314. 194.

Hab. France.

97. CRABRO PYGMÆUS.

Crabro pygmæus, *Rossi, Faun. Etrus. Mant. ii. Append. 124. 112?*
Van d. Lind, Obs. ii. 68. 30 ♀.

Lindenius pygmæus, *St. Farg. Ann. Soc. Ent. Fr. iii. 797. 6;*
Hym. iii. 199. 6 ♀.

Dahlb. Hym. Europ. i. 305. 185.

Wesm. Hym. Foss. Belg. 125. 3.

Lindenius curtus, *St. Farg. Ann. Soc. Ent. Fr. iii. 799. 9 ♂;*
Hym. iii. 201. 9.

Dahlb. Hym. Europ. i. 306. 187.

Hab. France; Germany; Belgium.

98. CRABRO PUSILLUS.

Crossocerus pusillus, *St. Farg. Ann. Soc. Ent. Fr. iii. 778. 14;*
Hym. iii. 181. 14.

Lucas, Explo. Sc. Algér. iii. 225. 208.

Crabro pusillus, *Dahlb. Hym. Europ. i. 323. 206.*

Hab. France; Algeria.

99. CRABRO RUBICOLA.

Solenius rubicola, *Dufour, Ann. Soc. Ent. Fr. ix. 25. 10. t. 2.*
f. 33-36 ♂ ♀.

Crabro (Ectemnius) rubicola, *Dahlb. Hym. Europ. i. 389. 267.*

Hab. France.

100. CRABRO LÆVICEPS.

Crossocerus rufipes, *St. Farg. Ann. Soc. Ent. Fr. iii. 784. 21 ♂;*
Hym. iii. 187. 20.

Dahlb. Hym. Europ. i. 324. 211.

Hab. France.

101. CRABRO STRIATULUS.

Blepharipus striatulus, *St. Farg. Ann. Soc. Ent. Fr. iii. 737.*
8 ♂; Hym. iii. 143. 8.

Crabro striatulus, *Dahlb. Hym. Europ. i. 367. 238.*

Hab. France.

102. CRABRO STRIATUS.

Crabro striatus, *St. Farg. Ann. Soc. Ent. Fr. iii. 707. 9; Hym.*
iii. 110. 9.

Lucas, Explo. Sc. Algér. iii. 245.

Crabro cephalotes, *Oliv. Encycl. Méth.* vi. 513. 9 ?

Panz. Faun. Germ. 62. 16.

Spin. Ins. Ligur. ii. 178. 11.

Hab. France.

103. *CRABRO SUBÆNEUS*.

Lindenius subæneus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 798. 7 ;

Hym. iii. 200. 7.

Dahlb. Hym. Europ. i. 305. 186.

Hab. Paris.

104. *CRABRO VENUSTUS*.

Lindenius venustus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 796. 5 ♀ ;

Hym. iii. 198. 5.

Dahlb. Hym. Europ. i. 304. 184.

Hab. France.

105. *CRABRO VARIPES*.

Crossocerus varipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 773. 9 ♀ ;

Hym. iii. 176. 9.

Dahlb. Hym. Europ. i. 321. 202.

Hab. France.

106. *CRABRO ASSIMILIS*.

Crabro affinis, *Wesm. Hym. Foss. Belg.* 130. 6 ♀ (nec *St. Farg.*).

Hab. Belgium.

107. *CRABRO DENTRICUS*.

Crabro denticus, *Herr. Schöff. Faun. Germ.* 181. 48. no. 7. t. 20 ♂.

Wesm. Hym. Foss. Belg. 143. 22.

Hab. Belgium.

108. *CRABRO LÆVIPES*.

Crabro lævipipes, *Van d. Lind, Obs.* ii. 67. 27 (var. 4-maculatus ♂ ?).

Dahlb. Hym. Europ. i. 313. 193.

Herr. Schöff. Faun. Germ. 317. 198 ?

Hab. Belgium.

109. *CRABRO GUTTATUS*.

Crabro guttatus, *Van d. Lind, Obs.* ii. 49. 9.

Dahlb. Hym. Europ. i. 400. 270.

Crabro guttatus, *Wesm. Hym. Foss. Belg.* 150. 31.

Crabro spinicollis, *Herr. Schöff. Faun. Germ.* 181. 27. t. 1 & 2.

Crabro parvulus, *Herr. Schöff. Faun. Germ.* 181. 37. t. 15 ♂.

Crabro borealis, *Dahlb. Exam. Crabr.* 81. 22. t. 5 ♂; *Dispos.* 15. 112.

Hab. Belgium; Germany; Austria; Sweden; Finland.

110. CRABRO CONGENER.

Crabro congener, *Dahlb. Hym. Europ.* i. 335. 219 ♀.

Hab. Germany.

111. CRABRO LOEWI.

Crabro Loewi, *Dahlb. Hym. Europ.* i. 368. 239 ♂.

Hab. Germany.

112. CRABRO RUGIFER.

Crabro rugifer, *Dahlb. Hym. Europ.* i. 404. 271 ♂.

Hab. Germany.

113. CRABRO SINUATUS.

Crabro sinuatus, *Fabr. Syst. Piez.* 310. 12.

Hab. Germany.

114. CRABRO ANNULATUS.

Crossocerus annulatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 787. 24 ♀;
Hym. iii. 190. 24.

Dahlb. Hym. Europ. i. 325. 213.

Hab. Austria (Vienna).

115. CRABRO KOLLARI.

Crabro Kollari, *Dahlb. Hym. Europ.* i. 415. 274.

Hab. Austria; Germany.

116. CRABRO VARUS.

Crabro varus, *Pear. Faun. Germ.* 62. 17.

Hab. Austria.

117. CRABRO BASALIS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the head closely punctured; the clypeus covered with silvery pubescence; the scape yellow, three or four of the basal joints of the flagellum of a reddish-yellow; the mandibles obscurely ferruginous. Thorax longitudinally coarsely rugose, the metathorax behind, and at the sides, transversely striate; a spot on each side of the collar and the tubercles yellow; the wings slightly coloured, the nervures and tegulæ ferruginous; the legs ferruginous, the anterior tibiæ yellowish. Abdomen closely punctured; the basal segment ferruginous, the second, third, fourth and fifth segments with an ovate pale yellow macula on each side; beneath, the first and second segments and the extreme apex ferruginous.

Hab. Polish Ukraine.

118. CRABRO CINXIUS.

Crabro cinxius, *Dahlb. Hym. Europ. i.* 318. 199.

Wesm. Hym. Foss. Belg. 129. 4.

Hab. Norway.

119. CRABRO LAPPONICUS.

Crabro lapponicus, *Zett. Ins. Lapp.* 443. 3 ♀.

Dahlb. Hym. Europ. i. 363. 235.

Hab. Lapland; Norway.

120. CRABRO MELANARIUS.

Crabro podagricus, *Dahlb. Hym. Europ. i.* 339. 222 (nec *Shuck.*).

Crabro melanarius, *Wesm. Hym. Foss. Belg.* 133.

Hab. Sweden.

121. CRABRO SULPHUREIPES.

B.M.

Male. Length 4 lines.—Black: the head as large as the thorax, finely punctured, the sides swollen; the clypeus covered with silvery pubescence; the scape and mandibles yellow, their tips rufo-piceous. Thorax closely punctured, the metathorax rugose, with a longitudinal channel extending from the base to the apex; the collar, tubercles, scutellum, post-scutellum, and legs of a sulphur-yellow; the coxæ, trochanters, and extreme base of the femora, black; the wings fulvo-hyaline; the collar produced on each side into a sharp subdentate angle. Abdomen with three broad yellow bands, the first at the base of the second segment and subinterrupted; the second at the base of the fourth,

and the third at the base of the fifth; sometimes a narrow stripe at the base of the sixth.

Hab. Sicily.

This species bears a close resemblance to *C. vagus*, but is at once distinguished by the acuter angles of the prothorax. The femora have sometimes their basal half black.

122. CRABRO BUCEPHALUS.

Male. Length $2\frac{1}{2}$ lines.—Black and shining: the head wider and larger than the thorax, with scattered punctures, the ocelli placed in a triangle on the vertex, a deep depression at the side of the posterior pair; the face deeply depressed, thinly covered as well as the clypeus with silvery pubescence; the tips of the scape and the flagellum rufo-piceous; a yellow spot at the inner orbit of the eyes, towards the vertex; the mandibles yellow, ferruginous towards their apex, with the tips black. Thorax with a few scattered punctures; the collar elevated, the anterior lateral angles acute; the scutellum, tubercles and collar yellow; the wings hyaline and iridescent; the legs rufo-testaceous; the tips of the anterior and intermediate femora, their tibiae and tarsi, yellow, the tibiae with a dark stain beneath; the posterior femora yellow at their base. Abdomen: the first segment with two spots in the middle, the second segment with a large ovate macula on each side.

Hab. Sicily.

123. CRABRO HILARIS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the head closely punctured; the scape, basal joint of the flagellum, the clypeus and mandibles, yellow, the latter black at their apex; the clypeus covered with golden pubescence. Thorax closely punctured; the collar, tubercles, an oblong spot beneath the wings, with one or two minute dots behind, the tegulae, scutellum, and a minute spot at its anterior angles and two spots on the post-scutellum, yellow; the metathorax ruggedly sculptured; the wings fulvo-hyaline, the nervures and a stain on the tegulae ferruginous; the apex of the wings smoky; the legs yellow, a rufo-piceous stain on the anterior and intermediate femora above, the posterior pair entirely so; the claw-joint of the tarsi ferruginous. Abdomen elongate, lanceolate, the first segment narrowed at its base and forming a petiole; the petiole dark rufo-piceous, the apical half of the segment yellow; two large maculae on the second segment nearly touching in the middle, the third, fourth and fifth segments with a broad yellow fascia on their apical

margins; beneath, each segment with a broad bisinuated yellow band on its apical margin; the apex of the first and the base of the second segment ferruginous.

Hab. Florida (St. John's Bluff). (Coll. E. Doubleday, Esq.)

124. *CRABRO IMPRESSIFRONS.*

Crabro tibialis, *Say, Narr. Exped. St. Peter's River, Append.* p. 73. 1.

Hab. Pennsylvania.

125. *CRABRO DUBIUS.*

Solenius interruptus, *St. Farg. Ann. Soc. Ent. Fr.* (1834) iii. 716. 3; *Hym.* iii. 122. 4.

Crabro confluentus, *Say, Bost. Journ.* i. 376 (1834-7) (var.?).

Hab. North America.

126. *CRABRO MACULATUS.*

B.M.

Crabro maculatus, *Fabr. Ent. Syst.* ii. 295. 8; *Syst. Piez.* 309. 9.

Hab. North America.

127. *CRABRO PICTUS.*

Blepharipus maculatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 730. 3; *Hym.* iii. 135. 3 (nec *Fabr.*).

Crabro maculatus, *Dahlb. Hym. Europ.* i. 344. 226.

Hab. North America.

128. *CRABRO MACULIPENNIS.*

B.M.

Blepharipus maculatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 730. 3 ♀ (nec *Fabr.*); *Hym.* iii. 135. 3.

Crabro maculatus, *Dahlb. Hym. Europ.* i. 344. 226.

Hab. North America.

Specimens from Hudson's Bay have the wings spotted a little differently to the description of *St. Fargeau*, as follows:—a small oblong-quadrate brown spot in the middle of the marginal cell, another at the apex of the externo-medial cell, and a third in the middle of the first recurrent nervure; in other respects the insects agree with *St. Fargeau's* description; but the species is quite distinct from the *maculatus* of *Fabricius*.

129. *CRABRO SINGULARIS.*

B.M.

Male. Length 5-6 lines.—Black: the head narrower than the thorax, the vertex much narrowed behind; the face deeply chan-

neled and striated longitudinally before the ocelli, and transversely so behind; the mandibles and scape yellow, the latter with a black spot behind; the base of the flagellum reddish-yellow, the third joint emarginate at the base and thickened at the apex. Thorax: the collar channeled, the lateral angles subdentate, and having a yellow spot on each side, the tubercles yellow; the mesothorax longitudinally striated; the scutellum shining and punctured; the metathorax very coarsely rugulose; wings yellowish, a narrow fuscous stain on the anterior margin beyond the stigma, the nervures ferruginous; the legs yellow, the intermediate femora fuscous beneath, the posterior pair rufo-fuscous, yellowish at their apex above; the apical joints of the tarsi black. Abdomen smooth and shining, subpetiolate; the second and four following segments with an ovate macula on each side at their basal margins, each one smaller than the preceding.

Hab. North America (Trenton Falls). (Coll. E. Doubleday, Esq.)

130. CRABRO 6-MACULATUS.

B.M.

Crabro 6-maculatus, Say, *Narr. Exped. St. Peter's River*, *Append.* p. 74. 3.

Hab. Pennsylvania.

131. CRABRO SCUTELLATUS.

Crabro scutellatus, Say, *Narr. Exped. St. Peter's River*, *Append.* p. 74. 2.

Hab. Pennsylvania.

132. CRABRO SCABER.

Solenius scaber, *St. Farg. Ann. Soc. Ent. Fr.* iii. 715. 2 ♂; *Hym.* iii. 121. 3.

Dahlb. Hym. Europ. i. 387. 260.

Hab. Philadelphia.

133. CRABRO RUFIPES.

Ceratocolus rufipes, *St. Farg. Ann. Soc. Ent. Fr.* iii. 741. 2 ♀; *Hym.* iii. 146. 2.

Dahlb. Hym. Europ. i. 381. 244.

Hab. Carolina.

134. CRABRO OBSCURUS.

B.M.

Female. Length 4 lines.—Black: head large, subquadrate; the ocelli in a triangle on the vertex; the clypeus covered with

golden pubescence; the middle of the mandibles and the scape yellow. Thorax: a spot on each side of the collar, the tubercles, and a spot in the middle of the post-scutellum, yellow; the mesothorax longitudinally roughened; the scutellum shining and with longitudinal punctures; the metathorax with a deep central longitudinal channel, which is transversely striated; the base of the metathorax coarsely obliquely striated, posteriorly transversely so; the wings slightly coloured, the nervures rufo-testaceous; the tibiæ and tarsi yellow; the claw-joint fuscous, as well as the second, third and fourth joints of the posterior pair. Abdomen smooth and shining, the second, third and fourth segments with a yellow fascia on their basal margins, the first three interrupted; the apical segment pinched at the sides and covered with yellow pubescence; beneath, immaculate.

The male closely resembles the female, but has a silvery pubescence on the clypeus, and the spots on the collar and post-scutellum obliterated; the fasciæ on the abdomen reduced to oblong lateral spots; the tibiæ have a black stain beneath.

Hab. Hudson's Bay. (Coll. G. Barnston, Esq.)

135. CRABRO TRIFASCIATUS.

B.M.

Crabro trifasciatus, Say, *Narr. Exped. St. Peter's River*, *Append.* p. 74. 4 (var. 6-maculatus?).

Hab. Pennsylvania; Hudson's Bay.

This species scarcely differs from *C. vagus*, and may be regarded as the American representative of it: the yellow markings are much paler; the antennæ of the male are of the same form as in *C. vagus*, and are apparently 12-jointed, as in that species.

136. CRABRO FRIGIDUS.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head finely punctured, the cheeks sparingly so, smooth and shining; the ocelli in a curve on the vertex; the scape and mandibles yellow, the base and apex of the latter black. Thorax: the mesothorax longitudinally striated; the scutellum shining, punctured at the base, and longitudinally striated beyond; the metathorax with a sub-defined half-circular space at its base, which is coarsely striated obliquely; posteriorly it is very coarsely and deeply rugulose; a spot on each side of the collar and the tubercles yellow, the anterior lateral angles of the collar subdentate; the knees, tibiæ and tarsi yellow, the apical joints of the latter fuscous, the extreme apex of the tibiæ with a ferruginous stain; the wings

fusco-hyaline. Abdomen smooth and shining, the first segment very delicately punctured, the following segments more distinctly so; the second and three following segments with an ovate pale yellow macula on each side at their basal margin; the apical segment produced into an obtuse spine, which has a sharp raised margin, and is covered sparingly with oblong punctures.

Hab. North America.

137. CRABRO CONFLUENTUS.

B.M.

Crabro confluentus, *Say, Bost. Journ.* i. 376.

Hab. N. America (Indiana).

138. CRABRO COLLINUS.

B.M.

Male. Length 5 lines.—Black: the head closely punctured; the clypeus and face with a golden pubescence; the cheeks thinly covered with silvery pubescence; the antennæ simple; the scape, basal joint of the flagellum, and the mandibles, yellow, the apex of the latter black. Thorax: the mesothorax coarsely punctured; the metathorax with a transverse enclosed space at its base, which is closely punctured, and with a series of deep fosulets around its margins, the sides and posterior portion very coarsely rugulose; the collar, tubercles, a spot on the tegulæ in front, and the post-scutellum, yellow; the legs yellow, with the femora reddish; wings fusco-hyaline, the tegulæ ferruginous. Abdomen shining, closely punctured, most sparingly but most strongly so at the base; an elongate-ovate yellow spot on each side of the three basal segments; the two following have a transverse narrow yellow band, the first slightly interrupted.

Hab. East Florida (St. John's Bluff). (Coll. R. Foster, Esq.)

139. CRABRO CHRYSARGINUS.

B.M.

Crabro chrysarginus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 711. 12;
Hym. iii. 114. 12.

Crabro arcuatus, *Say, Bost. Journ.* i. 377.

Crabro chrysargurus, *Dahlb. Hym. Europ.* i. 386. 257.

Hab. N. America (Indiana); Hudson's Bay.

140. CRABRO AURIFRONS.

B.M.

Female. Length 6 lines.—Black: the clypeus and face covered with golden pubescence; the scape, basal joint of the flagellum, and the mandibles, yellow outside; the head as wide as the thorax, delicately punctured, with the ocelli in an obtuse

triangle. Thorax: the collar slightly interrupted, the tubercles, a line at the base of the scutellum, and the post-scutellum, yellow; the mesothorax and scutellum coarsely punctured; the metathorax with an enclosed space at its base and a broad longitudinal channel which is transversely carinated, and entirely coarsely rugose; the wings fulvous, the nervures and tegulæ ferruginous; the legs reddish-yellow, the femora darkest, the apical joints of the tarsi fuscous. Abdomen finely punctured; the first and second segments with a lateral ovate yellow spot in the middle; the third, fourth and fifth segments with a narrow line on each side in the middle, the lines extending further inwards on each successive segment.

Hab. Georgia.

141. CRABRO ADVENA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the head with fuscous pubescence; the scape, clypeus, and a stripe on the mandibles, yellow; the clypeus covered with silvery pubescence; the ocelli in a triangle on the vertex. Thorax: a slightly interrupted line on the collar, tubercles, and a transverse stripe at the base of the scutellum, yellow; the mesothorax closely punctured, the metathorax very coarsely rugose; the tibiæ and tarsi yellow, a fuscous spot on the tibiæ beneath at their apex; the apical joints of the tarsi rufo-fuscous; the wings fusco-hyaline, the nervures and tegulæ ferruginous. Abdomen: the first, second and third segments with an interrupted yellow band placed a little behind the middle; the fourth and fifth segments with a yellow fascia on their apical margins; the apical segment forming an elongated triangle, obtuse at the apex and longitudinally rugose; beneath, smooth, shining and impunctate.

Male.—The clypeus and mandibles black; the flagellum fulvous beneath, with the second, third, fourth and fifth joints produced into a tooth at the apex; the punctures of the mesothorax running into elongate striæ; the thorax beneath covered with hoary pubescence; the anterior femora are ferruginous within, black behind, and have a yellow stripe beneath; the intermediate femora yellow at their apex; the tibiæ are yellow above and black beneath; the tarsi yellow, their apical joints fusco-ferruginous; all the segments of the abdomen with yellow fasciæ, the first four slightly interrupted.

Hab. Nova Scotia.

142. CRABRO UNICOLOR.

B.M.

Female. Length 6 lines.—Black: the head and thorax opaque;

the abdomen shining; the stemmata in a triangle on the vertex the face deeply canaliculated, covered, as well as the clypeus with silvery pubescence. The disk of the thorax very finely and closely punctured, slightly shining; the metathorax finely longitudinally rugose, with a central longitudinal channel extending from the base to the apex; wings smoky, the posterior pair palest. Abdomen faintly punctured towards the apex, the apical segment more strongly so, with the margins carinated, the apex rounded.

Hab. Sandwich Islands.

143. CRABRO DISTINCTUS.

B.M.

Female. Length 3 lines.—Black: the head and thorax opaque; the stemmata in a curve on the vertex; the face canaliculated; the inner orbit of the eyes half-way towards their vertex, and the clypeus, covered with golden pubescence; the scape and mandibles yellowish-white, the tips of the mandibles, and a narrow stripe on the scape within, black. Thorax: an interrupted line on the collar, the tubercles and a spot behind, the scutellum and post-scutellum, yellowish-white; wings faintly coloured and iridescent. Abdomen: the basal segment with a large transverse irregular-shaped spot, which is somewhat arched in front, and with two deep rounded emarginations behind, which have a wide one outside extending to the apex of the spot; the second, fourth and fifth segments have an uninterrupted fascia at their base, of a yellowish-white; the apical segment shining and punctured.

Hab. Sandwich Islands.

144. CRABRO FUSCIPENNIS.

Crabro fuscipennis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 710. 11; *Hym.* iii. 113. 11.

Dahlb. Hym. Europ. i. 385. 255.

Hab. India.

145. CRABRO INSIGNIS.

Female. Length $6\frac{1}{2}$ lines.—Black: head opaque, subquadrate, rather wider than the thorax; the stemmata in a curve placed forwards on the vertex; the clypeus covered with pale golden pubescence; antennæ and mandibles black. Thorax opaque: the collar grooved, with the anterior angles acute; the mesothorax longitudinally striated, with three abbreviated carinæ in front; the metathorax with a half-circular space at its base.

enclosed by a sharp ridge, in the centre of which are two longitudinal carinæ; on each side it is striated; the sides coarsely rugose, behind transversely striated; the wings fusco-hyaline, with a violet iridescence, the nervures rufo-fuscous; the anterior tibiæ ferruginous within; the posterior femora with a yellow stripe above, and the tibiæ with a stripe outside. Abdomen shining, the first segment with a yellow band in the middle which emits a quadrate spot in front and has two deep notches behind; the second, third, fourth and fifth segments with a yellow fascia at their basal margins, which are narrowed in the middle; beneath, the second and third segments have a yellow spot on each side.

Hab. India. (Coll. W. W. Saunders, Esq.)

146. *CRABRO ARGENTATUS.*

Lindenius argentatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 792. 1;
Hym. iii. 194. 1.

Dahlb. Hym. Europ. 300. 182.

Hab. India.

147. *CRABRO SEMIPUNCTATUS.*

Crabro semipunctatus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 711. 13 ♀;
Hym. iii. 115. 13.

Dahlb. Hym. Europ. i. 386. 258.

Hab. Rio Janeiro.

148. *CRABRO OPULENTUS.*

B.M.

Female. Length 4 lines.—Black: the head closely punctured, the ocelli in a curve; the face, above the insertion of the antennæ, with a changeable golden pile; a similar lustre on the vertex behind the eyes; that on the lower portion of the cheeks, base of the mandibles, clypeus, and inner orbit of the eyes, is dense, bright and silvery; the scape yellow. Thorax: the mesothorax covered with large confluent punctures; the scutellum with distinct separated punctures; the mesothorax has a central carina, and on each side of it a much more elevated one, all extending from the base to the disk; the metathorax with a deep longitudinal central channel, and a half-circular sub-enclosed space at its base, which is obliquely and very coarsely grooved; on each side of the enclosure it is coarsely sculptured; the posterior portion of the metathorax coarsely rugose, the lateral margins raised; the collar, tubercles, a spot beneath the wings, a double spot at the anterior lateral angles of the scutellum, and the post-scutellum, yellow; a spot at the apex of the anterior

femora beneath, another on the tibiæ above; the intermediate femora beneath, the tibiæ at their base above, and the posterior tibiæ with a stripe at their apex outside, yellow; the tarsi rufopiceous; the wings slightly coloured and iridescent. Abdomen: the two basal segments strongly punctured, the base of the first smooth and shining, the apical margins of both depressed; the first and second segments with a broad, oblong, transverse macula on each side in the middle; the third, fourth and fifth segments with a narrow interrupted fascia, also in the middle; the apical segment pinched in at the sides, which are yellow above, with the sides raised, forming an oblong channel.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

149. *CRABRO FLAVIPENNIS.*

Ceratocolus flavipennis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 740. 1.
Hym. iii. 145. 1.

Dahlb. Hym. Europ. i. 381. 243.

Hab. Brazil.

150. *CRABRO CRÆSUS.*

Solenius cræsus, *St. Farg. Ann. Soc. Ent. Fr.* iii. 727. 12 ♂ ♀.
Hym. iii. 132. 12.

Dahlb. Hym. Europ. i. 388. 266.

Hab. Cuba.

151. *CRABRO CARBONARIUS.*

B.M.

Female. Length 6 lines.—Black: the head and thorax slightly shining; the clypeus covered with silvery pubescence. Thorax: the lateral angles of the collar produced and acutely margined; at the sides, immediately beneath the raised margin, is a fossulet; the collar above has sometimes two slightly raised tubercles; the mesothorax smooth, with an abbreviated impressed line on each side, rather before the tegulæ; the impressed line at the margins of the scutellum simple, that at the base of the metathorax connate; the metathorax smooth and shining, with a deeply impressed line down the centre, which expands into a broad fossulet at the apex; at the sides a little griseous pubescence; the wings hyaline, the nervures ferruginous, the costal nervure black; the tegulæ testaceous; the apical joints of the tarsi testaceous. Abdomen highly polished, smooth and shining; the fourth segment pubescent; its apical margin fuscous; the apical segment punctured and sprinkled with pale hairs, its margins raised.

Hab. New Zealand.

152. CRABRO OCCULTUS.

Crabro? occultus, *Fabr. Syst. Piez.* 310. 14.

Dahlb. Hym. Europ. i. 343. 221.

Hab. Tangiers. .

153. CRABRO CHRYISIS.

Crossocerus chrysis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 770. 5 ♂;

Hym. iii. 173. 5.

Dahlb. Hym. Europ. i. 366. 236.

Hab. Brazil.

154. CRABRO TASMANICUS.

B.M.

Female. Length 6 lines.—Black: head subopaque, very closely punctured, the inner orbit of the eyes and the clypeus covered with silvery pubescence, the latter with a central carina; antennæ wanting. Thorax opaque; an interrupted line on the collar, which is deeply grooved, with the lateral angles acute; the enclosed space at the base of the metathorax obliquely rugose, the posterior portion transversely so; wings slightly coloured; the tegulæ rufo-testaceous; the anterior femora ferruginous, the intermediate and posterior pairs above and the tibiæ and tarsi ferruginous. Abdomen shining, very closely and finely punctured, the second segment with an oblique yellow stripe on each side at the base; the fourth segment with a yellow band at the basal margin; beneath, very smooth and shining.

Hab. Tasmania.

155. CRABRO LUTEICOLLIS.

Crossocerus lutei-collis, *St. Farg. Ann. Soc. Ent. Fr.* iii. 769. 4;

Hym. iii. 172. 4.

Dahlb. Hym. Europ. i. 384. 251.

Hab. —?

Genus 5. SPILOMENA.

Stigmus, pt., *Van d. Lind, Obs.* ii. 74 (1829).

Celia, *Shuck. Foss. Hym.* 182 (1837).

Spilomena, *Shuck. Trans. Ent. Soc.* ii. 79 (1840).

1. SPILOMENA TROGLODYTES.

B.M.

Stigmus troglodytes, *Van d. Lind, Obs.* ii. 74. 2.

St. Farg. Hym. iii. 99. 2.

- Celia troglodytes*, *Shuck. Foss. Hym.* 182. 1.
Dahlb. Hym. Europ. i. 238. 139.
Spilomena troglodytes, *Wesm. Hym. Foss. Belg.* 123. 1.
Smith, Cat. Brit. Hym. 32. gen. 4.
Hab. Britain; France; Germany; Belgium; Sweden.

Genus 6. STIGMUS.

Stigmus, *Jurine, Hym.* p. 139 (1804).

1. *STIGMUS PENDULUS.* Pl. X. fig. 1. B.M.
Stigmus pendulus, *Panz. Faun. Germ.* 86. 7.
Van d. Lind, Obs. ii. 74. 1.
Shuck. Foss. Hym. 181. 1.
Dahlb. Hym. Europ. i. 239. 141.
St. Farg. Hym. iii. 98. 1.
Wesm. Hym. Foss. Belg. 122. 1.
Stigmus ater, *Jurine, Hym.* 132. t. 9. gen. 7.
Latr. Gen. Crust. et Ins. iv. 84.
Spin. Ins. Lig. ii. 174. 1; *Ann. Soc. Ent. Fr.* (1840) p. 35.
Hab. Britain; France; Italy; Germany; Belgium; Sweden.

Genus 7. PASSALÆCUS.

Pemphredon, pt., *Van d. Lind, Obs.* ii. 79 (1829).
Diodontus, pt., *Curtis, Brit. Ent.* xi. 496 (1835).
Xylæcus, *Shuck. Foss. Hym. Consp. Gen.* (1837).
Passalæcus, *Shuck. Foss. Hym.* 188 (1837).

1. *PASSALÆCUS INSIGNIS.* B.M.
Pemphredon insignis, *Van d. Lind, Obs.* ii. 79. 3 ♂ (non ♀).
St. Farg. Hym. iii. 96. 3 ?
Diodontus insignis, *Curtis, Brit. Ent.* fol. 497. pl. 497.
Passalæcus insignis, *Shuck. Foss. Hym.* 189. 1.
Dahlb. Hym. Europ. i. 248. 148.
Wesm. Hym. Foss. Belg. 122. 4.
Hab. Britain; France; Germany; Belgium.
2. *PASSALÆCUS CORNIGER.* B.M.
Passalæcus corniger, *Shuck. Foss. Hym.* 191. 3.
Dahlb. Hym. Europ. i. 245. 145.
Hab. Britain; Sweden.

3. *PASSALÆCUS TURIONUM*.*Passalæcus Turionum*, *Dahlb. Hym. Europ.* i. 246. 146.*Wesm. Hym. Foss. Belg.* 122. 3.*Hab.* Germany; Sweden; Norway.4. *PASSALÆCUS GRACILIS*.

B.M.

Diodontus gracilis, *Curtis, Brit. Ent.* xi. t. 496.*Passalæcus gracilis*, *Shuck. Foss. Hym.* 190. 2.*Dahlb. Hym. Europ.* 242. 142.*Wesm. Hym. Foss. Belg.* 121. 1.*Hab.* Britain; Germany; Norway; Sweden; Finland.5. *PASSALÆCUS MONILICORNIS*.*Pemphredon insignis*, *Van d. Lind, Obs.* ii. 79. 3 ♀ (non ♂).*Passalæcus monilicornis*, *Dahlb. Hym. Europ.* i. 243. 144.*Wesm. Hym. Foss. Belg.* 122. 2.*Hab.* Germany; Sweden; Norway; Finland.6. *PASSALÆCUS SINGULARIS*.*Passalæcus singularis*, *Dahlb. Hym. Europ.* i. 243. 143 (var. *gracilis* ♂?).*Hab.* Scandinavia.7. *PASSALÆCUS BOREALIS*.*Passalæcus borealis*, *Dahlb. Hym. Europ.* i. 247. 147 ♂ ♀.*Hab.* Lapland; Norway.8. *PASSALÆCUS CUSPIDATUS*.

B.M.

Female. Length $3\frac{1}{4}$ lines.—Black: the head finely and closely punctured; the scape in front, the labrum and mandibles yellow, the latter rufo-piceous at their apex; the palpi yellow. Thorax closely and finely punctured on the disk; the metathorax coarsely rugose; the wings fusco-hyaline, the costal nervure and stigma black, the nervures testaceous; the anterior tibiæ in front, the tubercles and base of the posterior tibiæ, yellow; the apical joints of the tarsi fusco-ferruginous, the anterior pair palest. Abdomen: the petiole very short, rugose above; the abdomen smooth and shining.

Hab. Hudson's Bay.

Genus 8. PEMPHREDON.

Crabro, pt., *Fabr. Ent. Syst.* ii. 293 (1793).
 Sphex, pt., *Panz. Faun. Germ.* 52 (1804).
 Pemphredon, *Latr. Hist. Nat. Ins.* xiii. (1805).
 Cemonus, *Jurine, Hym.* 214 (1807).

1. PEMPHREDON LUGUBRIS.

B.M.

Crabro lugubris, *Fabr. Ent. Syst.* ii. 302. 30.
 Sphex unicolor, *Panz. Faun. Germ.* 52. 24.
 Cemonus unicolor, *Panz. Krit. Revis.* ii. 187.
 Jurine, Hym. t. 11. gen. 28.
 Cemonus lugubris, *Jurine, Hym.* p. 214.
 St. Farg. Hym. iii. 94. 1.
 Pemphredon lugubris, *Latr. Hist. Nat.* xiii. 325.
 Fabr. Syst. Piez. 315. 2.
 St. Farg. & Serv. Encycl. Méth. x. 48. 1.
 Van d. Lind, Obs. ii. 80. 4.
 Shuck. Foss. Hym. 196. 1.
 Dahlb. Hym. Europ. 259. 159.
 Zett. Ins. Lapp. 441. 1.
 Wesm. Hym. Foss. Belg. 118. 1.

Hab. Britain; France; Germany; Belgium; Sweden; Norway.

2. PEMPHREDON LUCTUOSUS.

B.M.

Pemphredon luctuosus, *Shuck. Foss. Hym.* 197. 2 ♂.
 Dahlb. Hym. Europ. i. 258. 158.

Hab. Britain.

This is in all probability a variety of the male of *lugubris*, the only difference being that the ridge which encloses the subcordiform space at the base of the metathorax is smooth and shining, whereas it is usually obliquely striated; but every degree of approach to smoothness is to be met with. No example of the female has occurred with the smooth limb, although many hundreds have been examined.

3. PEMPHREDON MONTANUS.

Pemphredon montanus, *Dahlb. Hym. Europ.* i. 262. 160 ♀ ♂.

Hab. Italy; Norway; Lapland.

4. PEMPHREDON LUGENS.

Pemphredon lugens, *Dahlb. Disp. Meth. Spec. Hym.* 12. 76 ♀ ♂.
Zett. Ins. Lapp. 444. 1.

Hab. Sweden; Lapland; Gothland.

5 PEMPHREDON ANNULATUS.

Pemphredon? *annulatus*, *Say, Bost. Journ.* i. 379. 2.

Hab. N. America (Indiana).

6. PEMPHREDON CONCOLOR.

Pemphredon? *concolor*, *Say, Narr. Exped. St. Peter's River, Append.* p. 72. 1.

Hab. Pennsylvania.

7. PEMPHREDON MARGINATUS.

Pemphredon? *marginatus*, *Say, Bost. Journ.* i. 379. 1.

Hab. N. America; Pennsylvania.

Genus 9. MIMESA.

Trypoxylon, pt., *Fabr. Syst. Piez.* 182. 6 (1804).

Pæn, Latr. Nouv. Dict. 2nd ed. 28 (1816).

Mimesa, *Shuck. Foss. Hym.* 228 (1837).

1. MIMESA UNICOLOR.

B.M.

Pæn unicolor, *Van d. Lind, Obs.* ii. 105. 3.

Mimesa unicolor, *Shuck. Foss. Hym.* 231. 3 ♂ ♀.

Wesm. Hym. Foss. Belg. 108. 1.

Smith, Cat. Brit. Hym. 41. 3.

Mimesa borealis, *Dahlb. Hym. Europ.* i. 2. 2 ♂ ♀.

Hab. Britain; Germany; Belgium; Sweden.

Dahlbom, in the diagnosis of this species, says that the petiole is carinated above, the carina being "non sulcata." The examination of a large number of examples shows this to be a variable character: in some specimens of males the channel is scarcely perceptible; and there can be little doubt of the correctness of Wesmael's opinion in regarding the *M. borealis* as synonymous with *M. bicolor*.

2. *MIMESA DAHLBOMI*.

B.M.

Mimesa unicolor, *Dahlb. Hym. Europ.* i. 1. 1 ♂ ♀.*Psen unicolor*, *St. Farg. Hym.* iii. 44. 4.*Mimesa Dahlbomi*, *Wesm. Hym. Foss. Belg.* 108. 2.*Hab.* Britain; France; Belgium; Sweden; Lapland.

This species is here introduced for the first time into the British list. It was detected amongst the examples arranged as *M. unicolor* in the collection of the late J. F. Stephens, Esq.

3. *MIMESA EQUESTRIS*.

B.M.

Trypoxylon equestre, *Fabr. Syst. Piez.* 182. 6.*Psen rufa*, *Panz. Faun. Germ.* 96. 17 ♀?*Psen equestris*, *Panz. Krit. Revis.* ii. 110.*Van d. Lind, Obs.* ii. 107. 4.*Curtis, Brit. Ent.* i. t. 25 ♀.*Mimesa equestris*, *Shuck. Foss. Hym.* 229. 1 ♂ ♀.*Dahlb. Hym. Europ.* i. 4. 5.*Wesm. Hym. Foss. Belg.* 109. 3?*Mimesa Shuckardi*, *Wesm. Hym. Foss. Belg.* 115. 5.*Hab.* Britain; France; Germany; Sweden.

M. Wesmael has been misled in changing the name *M. equestris* to *M. Shuckardi*, supposing the British species to be distinct from the *equestris* of Fabricius; this is quite possible, and the examples referred to this species by *M. Wesmael* are probably distinct; but although *Shuckard* has not described the petiole so minutely as *Wesmael*, yet all his characters belong to it: its dorsal surface is flat, shining, and more or less rugose; the lateral faces are bordered by an elevated longitudinal line, and have also a central carina; beneath, it is flat and slightly hollowed out at its extremity, and the second segment has sometimes an irregularly shaped black spot.

4. *MIMESA BICOLOR*.

B.M.

Psen bicolor, *Jurine, Hym.* t. 13 ♂.*Mimesa bicolor*, *Shuck. Foss. Hym.* 230. 2 ♂ ♀.*Wesm. Hym. Foss. Belg.* 113. 4.*Mimesa lutaria*, *Dahlb. Hym. Europ.* i. 4. 4.*Psen equestris*, *St. Farg. Hym.* iii. 43. 3.*Hab.* Britain; France; Belgium; Scandinavia.5. *MIMESA FRATERNUS*.*Mimesa? fraternus*, *Say, Narr. Exped. St. Peter's River, Append.* 73.*Hab.* Pennsylvania.

6. *MIMESA MELLIPES*.

Pæn? mellipes, *Say, Bost. Journ.* i. 369. 1.

Hab. N. America (Indiana).

7. *MIMESA BOREALIS*.

B.M.

Male. Length $2\frac{3}{4}$ lines.—Black: the head shining and finely punctured on the vertex, the face with a thin silvery pubescence; the antennæ clavate; tips of the mandibles ferruginous. Thorax shining and punctured, sparingly pubescent above, more thickly so on the sides and beneath, the pubescence of a silvery brightness; the metathorax very coarsely rugose; the tarsi pale rufo-testaceous; the wings hyaline and iridescent. Abdomen very smooth and shining, beyond the first segment thinly covered with short silky pubescence; the petiole with a longitudinal central carina, its apex acuminate, and having a central channel running from the base to the apex.

Hab. Hudson's Bay.

This species closely resembles the *M. unicolor*, but the antennæ are much more clavate; the metathorax is also much more coarsely sculptured.

8. *MIMESA ANTENNATA*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the head smooth and slightly shining; the face and mandibles densely covered with silvery pubescence; the clypeus produced, with an obtuse tooth in the middle; the mandibles ferruginous at their apex; the antennæ longer than the thorax; the flagellum very slender at the base and much thickened at the apex; the cheeks armed with stout curved spines. Thorax smooth and shining; the metathorax rounded behind, with a central impressed line in the middle which runs upwards to the verge of the truncation; wings hyaline, slightly clouded at their apex; the pectus and femora beneath covered with glittering silvery pubescence. Abdomen: the petiole narrowed towards the base; the abdomen very smooth and shining; the apical segment margined at the sides, and covered with scattered punctures and short glittering hairs.

The male closely resembles the female, but has the antennæ less thickened at the apex.

Hab. Sandwich Islands.

Genus 10. *DIODONTUS*.

Crabro, pt., *Fabr. Ent. Syst.* ii. 293 (1793).

Pemphredon, pt., *Fabr. Syst. Piez.* 314 (1804).

Stigmus, *Latr. Gen. Crust. et Ins.* iv. 84 (1806).
Cemonus, *Jurine, Hym.* 214 (1807).
Diodontus, *Curtis, Brit. Ent.* ii. 496 (1836).

1. *DIODONTUS MINUTUS*.

B.M.

Crabro minutus, *Fabr. Ent. Syst.* ii. 302. 32.
Pemphredon minutus, *Fabr. Syst. Piez.* 316. 9.
Van d. Lind, Obs. ii. 78. 2.
St. Farg. Hym. iii. 96. 2 ♀ (non ♂).
Sphex pallipes, *Panz. Faun. Germ.* 52. 22?
Cemonus minutus, *Jurine, Hym.* 214.
Stigmus minutus, *Latr. Gen. Crust. et Ins.* iv. 84.
Diodontus minutus, *Curtis, Brit. Ent.* fol. 496.
Shuck. Foss. Hym. 185. 1.
Dahlb. Hym. Europ. i. 252. 152.
Wesm. Hym. Foss. Belg. 121. 2.

Hab. Britain; France; Germany; Italy; Belgium; Sweden;
 Denmark.

2. *DIODONTUS TRISTIS*.

B.M.

Pemphredon tristis, *Van d. Lind, Obs.* ii. 76. 1.
Diodontus tristis, *Shuck. Foss. Hym.* 187. 3.
Dahlb. Hym. Europ. i. 249. 149.
Wesm. Hym. Foss. Belg. 120. 1.
Diodontus pallipes, *Dahlb. Hym. Europ.* i. 250. 151.
Hab. Britain; Germany; Belgium; Sweden.

3. *DIODONTUS LUPERUS*.

B.M.

Diodontus luperus, *Shuck. Foss. Hym.* 186. 2.
Dahlb. Hym. Europ. i. 254. 153.
Hab. Britain; Germany.

4. *DIODONTUS MEDIUS*.

Diodontus medius, *Dahlb. Hym. Europ.* i. 250. 150.
Hab. Sweden.

Genus 11. *CERATOPHORUS*.

Pemphredon, *Van d. Lind, Obs.* ii. 82 (1829).
Ceratophorus, *Shuck. Foss. Hym.* 198 (1837).

1. CERATOPHORUS MORIO.

B.M.

Pemphredon, *Van d. Lind*, *Obs.* ii. 82. 5 ♀ ♂.*Shuck. Foss. Hym.* 198. 3.*Ceratophorus morio*, *Shuck. Foss. Hym.* (note) 198.*Dahlb. Hym. Europ.* i. 256. 57.*Wesm. Hym. Foss. Belg.* 118. 1.*Hab.* Britain; Belgium; Sweden.

2. CERATOPHORUS ANTHRACINUS.

Ceratophorus anthracinus, *Smith, Zool. App.* ix. 126.*Hab.* Britain (Devon).

Genus 12. CEMONUS.

Pemphredon, *pt.*, *Latr. Gen. Crust. et Ins.* iv. 84 (1806).*Cemonus*, *Jurine, Hym.* 214 (1807).

1. CEMONUS UNICOLOR.

B.M.

Pemphredon unicolor, *Latr. Gen. Crust. et Ins.* iv. 84.*St. Farg. & Serv. Encycl. Méth.* x. 48. 3.*Van d. Lind, Obs.* ii. 83. 6.*Zett. Ins. Lapp.* 441. 2.*Curtis, Brit. Ent.* xiv. t. 632.*Cemonus unicolor*, *Jurine, Hym.* 214 (2nd Fam. note, without the synonyms).*Shuck. Foss. Hym.* 200. 1 ♂ ♀.*Dahlb. Hym. Europ.* i. 255. 155.*St. Farg. Hym.* iii. 94. 2.*Wesm. Hym. Foss. Belg.* 119. 1.*Hab.* Britain; France; Germany; Belgium; Lapland.

2. CEMONUS LETHIFER.

B.M.

Cemonus lethifer, *Shuck. Foss. Hym.* 201. 2 ♀ ♂.*Dahlb. Hym. Europ.* 254. 154.*Wesm. Hym. Foss. Belg.* 119. 3.*Hab.* Britain; Portugal; Belgium; Sweden.

3. CEMONUS RUGIFER.

Cemonus rugifer, *Dahlb. Hym. Europ.* i. 256. 156; *Synop. Spec.* 507. 3? ♀ ♂.*Wesm. Hym. Foss. Belg.* 119. 2.*Hab.* Belgium; Sweden; Silesia.

4. CEMONUS PARALLELUS.

Stigmus parallelus, Say, *Bost. Journ.* i. 378. 1.

Hab. Mexico.

5. CEMONUS FRATERNUS.

Stigmus fraternus, Say, *Narr. Exped. St. Peter's River, Append.* p. 73.

Hab. Pennsylvania.

6. CEMONUS PUSILLUS.

Cemonus? *pusillus*, Say, *Bost. Journ.* i. 378. 2.

Hab. N. America (Indiana).

7. CEMONUS INORNATUS.

B.M.

Cemonus inornatus, Say, *Narr. Exped. St. Peter's River, Append.* p. 73. 2.

Hab. Pennsylvania. (Coll. E. Doubleday, Esq.)

Genus 13. PSEN.

Psen, Latr. *Précis* (1796).

Sphex, pt., *Fabr. Ent. Syst. Supp.* 243 (1798).

Pelopœus, pt., *Fabr. Syst. Piez.* 202 (1804).

Trypoxylon, pt., *Fabr. Syst. Piez.* 180 (1804).

1. PSEN ATER. Pl. X. fig. 2.

B.M.

Sphex atra, *Fabr. Ent. Syst. Supp.* 244. 18. 19.

Panz. Faun. Germ. 72. 7.

Pelopœus unicolor, *Fabr. Syst. Piez.* 204. 10.

Pelopœus compressicornis, *Fabr. Syst. Piez.* 204. 11 ♂ ♀.

Trypoxylon atratum, *Fabr. Syst. Piez.* 182. 5 ♀.

Psen atra, *Panz. Krit. Revis.* ii. 108.

Psen pallipes, *Spin. Ins. Lig.* i. 94. 2.

Psen serraticornis, *Jurine, Hym.* t. 8. gen. 6 ♂.

Psen ater, *Van d. Lind, Obs.* ii. 102. 1.

Latr. Hist. Nat. xiii. 300?

Shuck. Foss. Hym. 225. 1.

St. Farg. Hym. iii. 40. 1.

Mimesa atra, *Dahlb. Hym. Europ.* i. 2. 3.

Meopora ater, *Wesm. Hym. Foss. Belg.* 116. 6.

Hab. Britain; France; Italy; Germany; Belgium; Scandinavia.

M. Wesmael has proposed the removal of this species from the genus *Psen*, in consequence of a difference in the neururation of the posterior wings. Throughout this catalogue the determination of the genera has been established on the neururation of the anterior wings in connexion with other characters.

2. *PSEN PALLIPES*.

B.M.

Sphex pallipes, Panz. *Faun. Germ.* 52. 22 ♂.

Trypoxylon atratum, Panz. *Faun. Germ.* 98. 15.

Psen atra, Panz. *Krit. Revis.* ii. 109.

Psen atratus, Van d. Lind, *Obs.* ii. 103. 2.

Shuck. Foss. Hym. 227. 2.

Dahlb. Hym. Europ. i. 5. 6.

St. Farg. Hym. iii. 40. 1.

Wesm. Hym. Foss. Belg. 116. 1.

Hab. Britain; France; Germany; Belgium; Sweden; Finland.

3. *PSEN FUSCIPENNIS*.

Psen fuscipennis, *Dahlb. Hym. Europ.* i. 5. 7 ♀.

Hab. Scandinavia.

4. *PSEN MEDIUS*.

B.M.

Male. Length 3 lines. — Head black, closely punctured; the face covered with silvery pubescence; the mandibles and flagellum beneath rufo-fulvous. Thorax black, strongly punctured, the punctures confluent in the middle of the disk; the metathorax very coarsely rugose; the sides and beneath the thorax with a short glittering pubescence; the tubercles, tegulae, extreme base of the wings, anterior and intermediate legs, and the posterior tibiae and tarsi, rufo-fulvous; the intermediate femora with a dark stain beneath; the wings hyaline and beautifully iridescent. Abdomen black, with the apical margin of the first segment and the second entirely red; the petiole wider at its extremity than at its base; the apical margins of the third and following segments rufo-piceous; the entire abdomen has a thin silky pile; beneath, coloured the same as above.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

This insect has exactly the appearance of *M. bicolor*, but it differs considerably from it in sculpture, and the neururation of its wings is that of *Psen*: it appears to form a connecting link between the two genera.

5. PSEN CONCOLOR.

Psen concolor, *Dahlb. Hym. Europ.* i. 6. 8.

Hab. Gothland.

Genus 14. CERCERIS.

Sphex, pt., *Linn. Faun. Suec.* no. 1660 (1761).

Crabro, pt., *Fabr. Syst. Ent.* 374 (1775).

Vespa, pt., *Harris, Expos.* 127 (1776).

Philanthus, pt., *Fabr. Ent. Syst.* ii. 288 (1793).

Cerceris, *Latr. Hist. Nat. Crust. et Ins.* xiii. (1804).

Diamma & *Didesmus*, *Dahlb. Hym. Europ.* i. 225 & 502 (1843-5).

1. CERCERIS ARENARIA.

B.M.

Sphex arenaria, *Linn. Fn. Suec.* 413. 1660; *Syst. Nat.* i. 946. 31 ♀.
Villers, Ent. iii. 235. 38.

Vespa exultus & *petulans*, *Harris, Expos.* t. 37. f. 1. 2 ♂ ♀.

Crabro 5-cinctus, *Fabr. Mant.* i. 295. 11 ♂.

Oliv. Encycl. Méth. vi. 514. 13.

Schrank, Faun. Boic. ii. 335. 2182.

Crabro arenarius, *Fabr. Mant.* i. 297. 20.

Philanthus arenarius, *Fabr. Ent. Syst.* ii. 290. 5; *Syst. Piez.* 303. 9.

Philanthus lætus, *Fabr. Ent. Syst.* ii. 291. 10; *Syst. Piez.* 305. 18.
Panz. Faun. Germ. 63. 11.

Cerceris aurita, *Fabr. Ent. Syst. Supp.* 268. 1.

Latr. Hist. Nat. xiii. 315. 1.

Spin. Ins. Ligur. i. 96. 1.

Cerceris læta, *Curtis, Brit. Ent.* vi. fol. 269. t. 269 ♀.

Cerceris arenaria, *Van d. Lind, Obs.* ii. 109. 3.

Shuck. Foss. Hym. 233. 1.

Dahlb. Hym. Europ. 205. 122.

St. Farg. Hym. iii. 16. 11.

Wesm. Hym. Foss. Belg. 100. 1.

Hab. Britain; France; Italy; Germany; Austria; Belgium.

2. CERCERIS ORNATA.

B.M.

Philanthus ornatus, *Fabr. Ent. Syst.* ii. 290. 6; *Syst. Piez.* 304. 11.
Panz. Faun. Germ. 63. 10; *Krit. Revis.* ii. 174.

Crabro variabilis, *Schrank, Faun. Boic.* ii. 339. 2190.

Philanthus semicinctus, *Panz. Faun. Germ.* 47. 24.

Cerceris ornata, *Latr. Hist. Nat.* xiii. 317. 3; *Nouv. Dict.* ed. 2. v. 512.

Cerceris ornata, *Walck. sur le genre Halict.* 80.

Van d. Lind, Obs. ii. 117. 13.

Shuck. Foss. Hym. 239. 4.

Wesm. Hym. Foss. Belg. 105. 6.

Cerceris variabilis, *Dahlb. Hym. Europ.* i. 196. 118.

Hab. Britain ; France ; Germany ; Belgium ; Sweden ; Finland ; Scandinavia ; Algeria.

3. *CERCERIS INTERRUPTA.*

B.M.

Crabro 5-fasciatus, *Rossi, Faun. Etrus. Mant.* i. 139. 207 ?

Philanthus quinquecinctus, *Panz. Faun. Germ.* 63. 12 ♂, nec *Fabr.*

Philanthus interruptus, *Panz. Faun. Germ.* 63. 17 ♀.

Philanthus ruficornis, *Fabr. Ent. Syst.* ii. 292. 11 ?

Cerceris 5-fasciata, *Van d. Lind, Obs.* ii. 115. 9 (teste *Wesm.*).

Wesm. Hym. Foss. Belg. 103. 4.

Cerceris interrupta, *Shuck. Foss. Hym.* 238. 3.

St. Farg. Hym. iii. 7. 4.

Cerceris nasuta, *Dahlb. Hym. Europ.* i. 215. 128.

Cerceris subdepressa, *St. Farg. Hym.* iii. 12. 7 ?

Hab. Britain ; France ; Italy ; Germany ; Belgium ; Sweden.

4. *CERCERIS LABIATA.*

B.M.

Crabro labiatus, *Fabr. Ent. Syst.* ii. 296. 11 ♀.

Crabro cunicularius, *Schrank, Faun. Boic.* ii. 335. 2183.

Crabro bidens, *Schrank, Faun. Boic.* ii. 335. 2183.

Philanthus labiatus, *Panz. Faun. Germ.* 63. 16 ♀.

Fabr. Syst. Piez. 303. 10.

Philanthus arenarius, *Panz. Faun. Germ.* 46. 2 ♂.

Cerceris nasuta, *Latr. Gen. Crust. et Ins.* iv. 94 ♂ ♀.

Cerceris labiata, *Van d. Lind, Obs.* ii. 111. 5.

Shuck. Foss. Hym. 236. 2.

Dahlb. Dispos. 16. 123 ; *Hym. Europ.* i. 217. 129.

Wesm. Hym. Foss. Belg. 104. 5.

Hab. Britain ; France ; Italy ; Germany ; Austria ; Belgium ; Sweden ; Finland.

5. *CERCERIS EMARGINATA.*

B.M.

Philanthus emarginatus, *Panz. Faun. Germ.* 63. 19.

Cerceris variabilis, *Dahlb. Hym. Europ.* i. 196. 118 (var.).

Hab. Britain ; Austria ; Albania ; Sicily.

This species differs so much from all the recorded varieties of

C. ornata, that, without connecting links, it appears to be specifically distinct; several examples from Devonshire are in the Museum, all agreeing in having the legs entirely yellow, dashed with ferruginous, a large ovate macula on the sides of the metathorax, and four yellow emarginate bands on the abdomen; they agree with *C. ornata* in having a semicircular carina at the base of the second segment beneath.

6. *CERCERIS SABULOSA*.

B.M.

Philanthus sabulosus, *Panz. Faun. Germ.* 63. 13 ♂.

Philanthus quadricinctus, *Panz. Faun. Germ.* 63. 15 ♀.

Cerceris fasciata, *Spin. Ins. Ligur.* i. 97. 2 ♀.

Cerceris quadricincta, *Latr. Hist. Nat.* xiii. 316. 2.

Van d. Lind, Obs. ii. 144. 8.

Shuck. Foss. Hym. 243. 5.

Dahlb. Hym. Europ. i. 212. 126 (nec var. β).

St. Farg. Hym. iii. 23. 15.

Lucas, Expl. Sc. Algér. iii. 254.

Wesm. Hym. Foss. Belg. 102. 3.

Cerceris cincta, *Dahlb. Hym. Europ.* i. 204?

Hab. Britain; France; Italy; Sicily; Germany; Belgium.

7. *CERCERIS BIDENTATA*.

Cerceris bidentata, *St. Farg. Hym.* iii. 9. 5.

Hab. France (Paris).

8. *CERCERIS BREVIROSTRIS*.

Cerceris brevirostris, *St. Farg. Hym.* iii. 13. 8.

Hab. France (Paris).

9. *CERCERIS BUPRESTICIDA*.

Cerceris bupresticida, *Dufour, Ann. des Sci. Nat. Zool.* 2nd ser. xv. 370. t. 11. f. 1 ♀.

Dahlb. Hym. Europ. Synop. Spec. i. 498.

Hab. South of France; Spain.

10. *CERCERIS FRONTALIS*.

Cerceris argentifrons, *St. Farg. Hym.* iii. 25. 17 ♂ ♀ (nec Guér.).

Hab. France (St. Sévres).

This is probably only a variety of *C. ornata*.

11. *CERCERIS MINUTA*.*Cerceris minuta*, *St. Farg. Hym.* iii. 27. 18 ♂ ♀.*Hab.* France (St. Sévres).12. *CERCERIS TUBERCULATA*.

B.M.

Sphex tuberculata, *Vill. Ent.* iii. 253. 95.*Philanthus rufipes*, *Fabr. Ent. Syst.* ii. 290. 4; *Syst. Piez.* 303. 8.*Cerceris vespoides*, *Illig. Faun. Etrus. Mant.* ii. 133. 859.*Cerceris major*, *Spin. Ins. Ligur.* ii. 50. t. 1. f. 2 a. b ♀, c ♂.*Germ. Faun. Europ.* 12. 22.*Drap. Ann. Sc. Phys.* i. 297. 24.*Cerceris tuberculata*, *Germ. Reise n. Dalm.* 281. 354.*Van d. Lind, Obs.* ii. 108. 2.*Dahlb. Hym. Europ.* i. 220. 131.*St. Farg. Hym. Europ.* iii. 10. 6.*Hab.* France; Italy; Dalmatia; Albania; Belgium; Spain.13. *CERCERIS FARGEII*.*Cerceris Dufourii*, *St. Farg. Hym.* iii. 14. 9 ♀ (nec Guér.).*Hab.* France (St. Sévres).14. *CERCERIS FERREI*.

B.M.

Cerceris Ferrei, *Van d. Lind, Obs.* ii. 112. 6 ♀.*St. Farg. Hym.* iii. 4. 2 ♂ ♀.*Dahlb. Hym. Europ.* i. 219. 103.*Hab.* South of France; Albania.15. *CERCERIS NITIDA*.*Cerceris nitida*, *Wesm. Hym. Foss. Belg.* 100. 2 ♀.*Hab.* Belgium.16. *CERCERIS HORTORUM*.

B.M.

Cerceris hortorum, *Panz. Faun. Germ.* 63. 9.*Hab.* Germany; Dalmatia.

This may probably be a mere variety of *C. emarginata*. Some specimens of the female from Dalmatia have merely a lateral yellow square spot on the third segment of the abdomen and a minute one on the fifth, the latter frequently obsolete.

17. *CERCERIS ANNULATA.*

B.M.

Crabro annulatus, Rossi, Faun. Etrus. Append. 123. 109.*Vespa annulata, Rossi, Faun. Etrus. (ed. Illig.)* ii. 145. 874.*Cerceris annulata, Van d. Lind, Obs.* ii. 115. 10.*Dahlb. Hym. Europ.* i. 214. 127.*Hab.* Italy.18. *CERCERIS ALBO-FASCIATA.**Crabro albo-fasciata, Rossi, Faun. Etrus. Mant.* ii. 138. 306.*Vespa albo-fasciata, Rossi, Faun. Etrus. (ed. Illig.)* ii. 143.*Cerceris albo-fasciata, Van d. Lind, Obs.* ii. 116. 12.*Dahlb. Hym. Europ.* i. 201. 119.*Cerceris tricineta, Spin. Ins. Ligur.* i. 27. 11. t. 1. f. 9 ♂.*Van d. Lind, Obs.* ii. 116. 11.*Hab.* Italy; Tuscany; Prussia.19. *CERCERIS ALBO-NOTATA.*

B.M.

Cerceris albo-notata, Spin. Ins. Ligur. i. 99. 5.*Van d. Lind, Obs.* ii. 120. 17.*Dahlb. Hym. Europ.* i. 203. 121.*Hab.* Italy; Dalmatia; Albania.20. *CERCERIS MODESTA.*

B.M.

Female. Length $3\frac{1}{4}$ lines.—Black, closely punctured: the sides of the face, two minute spots on the clypeus (sometimes obsolete), the mandibles and scape in front, pale yellow; the flagellum fulvous beneath; the tips of the mandibles ferruginous. Thorax: a spot on each side of the collar, another on the tegulae and the post-scutellum, yellowish-white; the subcordiform space at the base of the metathorax punctured; the wings slightly coloured, with a darker cloud at their apical margins, the nervures ferruginous; the anterior femora at their apex in front and the tibiae and tarsi pale yellow, the posterior tibiae with a fuscous stain at their apex within. Abdomen: the first segment of the abdomen ferruginous; the third and fifth segments with a large pale yellow macula on each side, pointed within; the spots on the fifth segment uniting or usually subinterrupted.

The male differs in having the face yellow below the antennae, and in having the basal segment of the abdomen black.

Hab. Albania.

21. *CERCERIS FLAVICORNIS*.

B.M.

Cerceris flavicornis, *Brullé, Expéd. Sc. de Morée*, iii. 373. 824. t. 51. f. 3.

Hab. The Morea ; Albania.

22. *CERCERIS CAPITATA*.

Female. Length $6\frac{1}{2}$ –7 lines.—Black, closely punctured : the head wider than the thorax ; the clypeus produced at its apex and rounded, not elevated, but curving slightly upwards ; a large spot behind the eyes, two small ones on the vertex, the scape in front, a large ovate spot on the clypeus, a small one on each side, the sides of the face as high as the antennæ, and a spot at the base of the mandibles, yellow ; the mandibles ferruginous ; the flagellum fulvous beneath. Thorax : an interrupted line on the collar, the tegulæ, a minute spot on each side of the scutellum, the post-scutellum, and an angular spot on each side of the metathorax, yellow ; the wings slightly coloured, a darker cloud at the apical margins of the anterior pair, the nervures ferruginous ; the subcordiform space at the base of the metathorax roughly punctured ; the legs of a reddish-yellow, with the tarsi, the tibiæ, and femora in front, yellow ; the coxæ rufo-fuscous. Abdomen : the first segment with a yellow spot on each side, the three following with a subinterrupted fascia on their apical margins, widest at the sides ; the fifth segment yellow, with an angular black spot in the middle of its base ; beneath black, with the middle of the segments rufo-piceous.

Hab. Albania. (Coll. W. W. Saunders, Esq.)

23. *CERCERIS TRIFASCIATA*.

B.M.

Female. Length 5 lines.—Black : the head and thorax strongly punctured ; the face, below the insertion of the antennæ, yellow ; the margins of the clypeus and the triangular spot above it, black ; the mandibles yellow, with their tips black ; the basal joints of the flagellum ferruginous beneath, the tip ferruginous. Thorax : the tegulæ black, smooth and shining ; the wings slightly coloured, the nervures ferruginous, the anterior margin of the fore-wings clouded towards their apex ; the anterior and intermediate tibiæ and tarsi yellow, the latter slightly ferruginous ; the posterior tibiæ and tarsi ferruginous. Abdomen punctured, the two basal segments strongly so, the three following much more finely so and shining ; the apex of the fifth and the sixth strongly punctured ; the second, third and fourth segments with a narrow

yellow fascia on their apical margins, slightly attenuated in the middle.

Hab. Polish Ukraine.

24. *CERCERIS RUFIPES.*

B.M.

Female. Length 6 lines.—Black, strongly punctured: an ovate spot above the clypeus, opposite to which, on each side of the face, touching the orbit of the eyes, a larger spot, and a very minute one at the base of the clypeus, yellow; a minute yellow spot behind the eyes. Thorax: a yellow spot on the tegulæ in front; the wings fusco-hyaline; the legs ferruginous, the posterior tibiæ and tarsi dashed with yellow. Abdomen: a small yellow spot on each side of the first segment; a narrow yellow band on the second, third and fourth segments, very slightly interrupted and narrowed in the middle, and a broader one on the fifth, slightly narrowed in the middle; beneath, immaculate.

Hab. Polish Ukraine.

25. *CERCERIS CITRINELLA.*

B.M.

Female. Length $4\frac{1}{2}$ lines.—Pale yellow, thickly and strongly punctured: a transverse black stripe between the eyes, enclosing the ocelli, from which two narrower lines run downwards to the insertion of the antennæ; the tips of the mandibles rufo-piceous. The prothorax black anteriorly; the mesothorax with three longitudinal black stripes which unite with a transverse one at the base; a black spot behind the tegulæ; the wings hyaline, their nervures pale ferruginous; the posterior legs with ferruginous stains. Abdomen: the apical and basal margins of the segments narrowly and slightly ferruginous, the apical segment entirely so; beneath, the apical margins only ferruginous.

Hab. Siberia.

26. *CERCERIS FLAVIVENTRIS.*

Cerceris flaviventris, *Van d. Lind, Obs.* ii. 107. 1.

Dahlb. Hym. Europ. i. 195. 117.

Hab. Spain.

27. *CERCERIS CONCINNA.*

Cerceris concinna, *Brullé, Hist. Nat. Il. Canar.* iii. 90. 48.

Hab. Canary Islands.

28. *CERCERIS SEMIRUFA.*

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head not very strongly

or thickly punctured; the antennæ ferruginous, with the apical half of the flagellum fuscous above; the face below the antennæ yellow; the margins of the clypeus and the carina above, black; the mandibles yellow, with their tips rufo-piceous. Thorax delicately punctured, the metathorax more strongly so; the collar with an interrupted stripe, the tegulæ, scutellum and post-scutellum, yellow; the wings hyaline, the nervures ferruginous; the legs ferruginous. Abdomen: the three basal segments rufous, the three apical ones black; the first segment punctured at the base, the intermediate segments nearly impunctate, the apical ones sparingly punctured; the apical margins of the third, fourth and fifth segments with a narrow pale yellow fascia, slightly attenuated in the middle; a spot on the margin of the second segment, laterally.

Hab. Siberia.

29. *CERCERIS TRUNCATULA*.

Cerceris truncatula, *Dahlb. Hym. Europ.* i. 210. 124 (var. *interrupta*?).

Hab. Sweden.

This is probably a mere variety of *C. interrupta*: the females sometimes have the clypeus slightly elevated.

30. *CERCERIS SPINIPECTUS*.

B.M.

Female. Length 8 lines.—Head yellow, with the cheeks beneath and the maxillæ black; a black spot on the vertex touching the orbit of the eyes, its hinder margin curved; in front are two black lines emanating from it and running down to the base of each antenna; two obliquely placed spots behind the posterior stemmata; the tips of the mandibles black. Thorax black; the collar, tubercles, two spots beneath the wings, the tegulæ, scutellum and post-scutellum, and a large ovate macula on each side of the metathorax, yellow; wings hyaline, a fuscous cloud occupying the marginal cell, extending a little beneath it and passing round the apical margins of the wings, the nervures pale rufo-testaceous; the mesosternum swollen and produced laterally, where it is armed with a spine in the middle, and a second at its postero-apical margin; the legs orange-yellow. Abdomen yellow, the extreme basal margin of the segments black; beneath, immaculate:—the entire insect strongly punctured.

Male. Length 6 lines.—Very closely resembles the other sex,

but the basal margins of the abdomen are merely rufo-piceous, not black.

Hab. Trebizond.

This species closely resembles the *C. pulchella* of Klug, but is at once distinguished by having the anterior margin of the clypeus rounded; in *C. pulchella* it is emarginate its entire width.

31. *CERCERIS INSULARIS*.

Female. Length 6 lines.—Black: the face and mandibles reddish-yellow, the tips of the latter rufo-piceous; a large ferruginous spot beneath the wings; the scape yellow, the flagellum fulvous towards the base. Thorax: a broad stripe on the collar, a lunate spot beneath the wings, with a minute one beneath it, the tegulæ, hinder margin of the scutellum, the post-scutellum, and the sides of the metathorax, yellow; the subcordate space at the base of the metathorax longitudinally striated; wings fulvohyaline, a faint cloud occupying the marginal cell and extending to the apex of the wings. Abdomen: the apical margins of the segments with yellow marginal bands; the first and second notched in the middle, the third and fourth widely emarginate; the fifth segment yellow, with an angular black spot in the middle of its base: beneath, rufo-piceous; a broad, yellow, slightly interrupted band in the middle of the second, third and fourth segments; two minute yellow spots on the fifth segment.

Hab. Sicily. (Coll. F. Smith.)

32. *CERCERIS INSIGNIS*.

Cerceris insignis, Klug, *Symb. Phys.* dec. v. t. 47. f. 12 ♀.

Hab. Arabia.

33. *CERCERIS VIDUA*.

Cerceris vidua, Klug, *Symb. Phys.* dec. v. t. 47. f. 11 ♂.

Hab. Arabia.

34. *CERCERIS DISPAR*.

Cerceris dispar, Dahlb. *Hym. Europ. Synop. Spec.* i. 499. 9.

Hab. Egypt.

35. *CERCERIS ERYTHROCEPHALA*.

Cerceris erythrocephala, Dahlb. *Hym. Europ. Synop. Spec.* 502. 27.

Hab. Egypt.

36. *CERCERIS EXCELLENS*.*Cerceris excellens*, *Klug, Symb. Phys.* dec. v. t. 47. f. 15 ♂.*Hab.* Lower Egypt (Sakkara).37. *CERCERIS HISTRIO*.*Cerceris histrio*, *Dahlb. Hym. Europ. Synop. Spec.* i. 499. 11.*Hab.* Egypt.38. *CERCERIS HISTRIONICA*.*Cerceris histrionica*, *Klug, Symb. Phys.* dec. v. t. 47. f. 9 ♂ ♀.*Hab.* Lower Egypt (Sakkara).39. *CERCERIS KLUGII*.*Cerceris annulata*, *Klug, Symb. Phys.* dec. v. t. 47. f. 13 ♂ (nec *Rossi*).*Hab.* Egypt.40. *CERCERIS PULCHELLA*.

B.M.

Cerceris pulchella, *Klug, Symb. Phys.* dec. v. t. 47. f. 14 ♂.*Hab.* Egypt. (Coll. F. Smith.)41. *CERCERIS SOLITARIA*.*Cerceris solitaria*, *Dahlb. Hym. Europ. Synop. Spec.* i. 502. 26.*Hab.* Egypt.42. *CERCERIS ALBICINCTA*.*Cerceris albicincta*, *Klug, Symb. Phys.* dec. v. t. 47. f. 10 ♂.*Hab.* Ethiopia (Ambukohl).43. *CERCERIS ABDOMINALIS*.

B.M.

Philanthus abdominalis, *Fabr. Ent. Syst.* 306. 24.*Cerceris rufiventris*, *St. Farg. Hym.* iii. 29. 20.*Lucas, Explo. Sc. Algér.* iii. 255. t. 13. f. 3.*Hab.* Tangiers; Algeria (Oran).

This species is subject to considerable variation in the markings; the head is frequently immaculate as well as the abdomen.

44. CERCERIS CAPITO.

B.M.

Cerceris capito, *St. Farg. Hym.* iii. 15. 10 ♂ ♀.*Lucas, Explo. Sc. Algér.* 251. t. 12. 9.*Hab.* Algeria (Oran).

45. CERCERIS CLITELLATA.

Cerceris clitellata, *St. Farg. Hym.* iii. 28. 19.*Lucas, Explo. Sc. Algér.* iii. 255. t. 13. f. 2.*Hab.* Algeria (Oran).

46. CERCERIS FASCIATA.

B.M.

Cerceris fasciata, *St. Farg. Hym.* iii. 30. 21.*Lucas, Explo. Sc. Algér.* iii. 256. t. 13. f. 6.*Hab.* Algeria (Oran).

47. CERCERIS FOVEATA.

Cerceris foveata, *St. Farg. Hym.* iii. 31. 22.*Lucas, Explo. Sc. Algér.* iii. 257. t. 13. f. 5.*Hab.* Algeria (Oran).

48. CERCERIS LATICINCTA.

B.M.

Cerceris laticincta, *St. Farg. Hym.* iii. 18. 12 ♂.*Lucas, Explo. Sc. Algér.* iii. 252. t. 12. f. 10.*Hab.* Algeria (Oran).

49. CERCERIS LINDENII.

Cerceris Lindenii, *St. Farg. Hym.* iii. 19. 13.*Lucas, Explo. Sc. Algér.* iii. 253. t. 12. f. 11.*Hab.* Algeria (Oran).

50. CERCERIS NASUTA.

B.M.

Cerceris nasuta, *St. Farg. Hym.* iii. 6. 3 ♂ ♀.*Lucas, Explo. Sc. Algér.* iii. 250. t. 12. f. 8.*Hab.* Algeria; Port Natal.

51. CERCERIS VITTATA.

Cerceris vittata, *St. Farg. Hym.* iii. 24. 16 ♀.*Lucas, Explo. Sc. Algér.* iii. 254. t. 13. f. 1.*Hab.* Algeria (Oran).

52. *CERCERIS BICOLOR*.

Female. Length $5\frac{1}{2}$ lines.—The head and thorax black, the legs and abdomen ferruginous; the head and thorax closely but not coarsely punctured; the clypeus elevated from its base, convex above, with a transverse yellow spot; the sides of the face and the carina between the antennæ, yellow; the basal half of the mandibles and a minute spot behind the eyes, yellow; a spot on each side of the collar, and another on the tegulæ, yellow; wings dark fuscous, with a violet iridescence. The abdomen sparingly punctured, an indistinct yellow line on the apical margin of the first segment.

Hab. The Gambia. (Coll. F. Smith.)

53. *CERCERIS TYRANNICA*.

Female. Length 5 lines.—Black and punctured: the face and a large spot behind the eyes yellow, the latter forming a tridentate shape above the antennæ; the hinder margin of the vertex ferruginous, with two yellow spots in the middle; the mandibles yellow and also the scape in front; the antennæ ferruginous, tips of the mandibles black. Thorax: the collar, sides of the thorax beneath the wings, the tegulæ, scutellum, post-scutellum and the sides of the metathorax, yellow; wings hyaline, the nervures ferruginous; the apical margins with a dark fuscous cloud; the legs ferruginous, with a large, ovate, yellow macula on each side of the segments, occupying nearly their entire width; the apical segment yellow; the space between the spots on the basal segment black; beneath ferruginous.

Hab. The Gambia. (Coll. F. Smith.)

54. *CERCERIS FOSSOR*.

Male. Length 5 lines.—Head and thorax black, coarsely punctured; the face ferruginous, with a yellow spot on the anterior margin of the clypeus, and a smaller one at the anterior angles of the face; the scape yellow in front; the mandibles yellow, with their apex rufo-piceous. Thorax: an interrupted line on the collar, a spot on the tegulæ in front, the post-scutellum, and a minute spot on each side of the metathorax, yellow; wings fusco-hyaline, with a purple iridescence, the subcordate space at the base of the metathorax transversely striated, the metathorax swollen at the sides; a yellow spot at the apex of the anterior femora outside; the tibiæ and tarsi yellow, the apical joints of the latter slightly ferruginous; the intermediate legs have the apex of the coxæ, the trochanters, the tibiæ and tarsi yellow; the posterior legs, with the coxæ, trochanters, and

base of the femora, yellow. Abdomen ferruginous; the basal segment black, with a narrow yellow line on the apical margin.

Hab. The Gambia. (Coll. F. Smith.)

55. *CERCERIS FLAVIFRONS.*

Male. Length $4\frac{1}{2}$ lines.—Head and thorax black, closely punctured; the face, scape in front, and the mandibles pale yellow; a minute yellow spot behind the eyes; the flagellum fulvous towards the base. Thorax: an interrupted line on the collar, a spot on the tegulae in front, two spots on the scutellum, the post-scutellum, and a large oblong macula on each side of the metathorax and the legs, yellow; the femora above rufo-piceous, the tarsi and the posterior tibiae slightly ferruginous; the wings fusco-hyaline, with a violet iridescence. Abdomen pale ferruginous, with a yellow line on the posterior margin and at the sides.

Hab. West Africa. (Coll. F. Smith.)

56. *CERCERIS PERBOSCII.*

Cerceris Perboscii, Guér. *Icon. Règ. Anim.* 444.

Hab. Senegal.

57. *CERCERIS PICTA.*

Cerceris picta, Dahlb. *Hym. Europ.* i. 222.

Hab. Senegal.

58. *CERCERIS FULVIVENTRIS.*

Cerceris fulviventris, Guér. *Icon. Règ. Anim.* p. 444; *Voy. Abyss. Lefeb.* vi. 358.

Hab. Senegal; Abyssinia; Gambia. (Coll. F. Smith.)

59. *CERCERIS LUXURIOSA.*

Cerceris luxuriosa, Dahlb. *Hym. Europ. Synop. Spec.* i. 498.

Hab. Abyssinia (Syrkut).

60. *CERCERIS SYRKUTI.*

Cerceris Syrkuti, Dahlb. *Hym. Europ. Synop. Spec.* i. 502. 28.

Hab. Syrkut (Abyssinia?).

61. *CERCERIS FORMOSA.*

B.M.

Cerceris formosa, Dahlb. *Hym. Europ. Synop. Spec.* 499. 12.

Hab. Port Natal.

62. *CERCERIS RAPTOR*.

B.M.

Female. Length 4 lines.—Black and punctured; the clypeus, sides of the face, the carina between the antennæ, the scape in front, and the mandibles, yellow; the flagellum fulvous beneath. Thorax: a spot on each side of the collar, another in front of the tegulæ, and the post-scutellum, yellow; the anterior and intermediate femora yellow beneath, except at their base; the tibiæ and tarsi yellow, a black spot at the tip of the posterior tibiæ within, and the four apical joints of the tarsi fuscous; wings hyaline, with a black spot at the apex of the anterior pair. Abdomen: a transverse yellow spot at the base of the second segment; the third segment yellow, with a deep emargination in front; the fifth segment yellow, with a similar emargination to that of the fifth segment; the third segment beneath yellow at the sides, and the apical margin with a narrow yellow band.

Hab. West Africa (Whydah).

This species very closely resembles the *C. ornata*, but is more deeply punctured, and is at once distinguished by the black spot on the wings: otherwise they approach very closely.

63. *CERCERIS RIGIDA*.

B.M.

Male. Length 4 lines.—Black: the face below the antennæ, the scape in front and the mandibles, yellow; the scape above and the flagellum rufo-piceous. Thorax and abdomen covered with large deep confluent punctures; the post-scutellum, a spot on the tegulæ in front, and another on each side of the meta-thorax, yellow; the wings hyaline, with a dark cloud at their apical margins; the legs yellow, the anterior and intermediate femora with a black stripe at their base above, the posterior femora and tibiæ black above, with their base and apex rufo-piceous, the posterior tarsi rufo-piceous. Abdomen: the basal segment with a spot on each side, the following segment with an interrupted yellow line on its apical margin, the fourth and fifth usually entire.

Hab. Port Natal.

64. *CERCERIS LUNIGERA*.

Cerceris lunigera, *Dahlb. Hym. Europ. Synop. Spec.* i. 499.

Hab. Cape of Good Hope.

65. *CERCERIS ALBIFRONS*.

Male. Length 4 lines.—Black, closely punctured: the face

white; the flagellum fulvous beneath. Thorax: a white spot on the tegulæ in front; the tibiæ and tarsi pale testaceous, the femora rufo-testaceous as well as the posterior tibiæ and tarsi; wings fulvo-hyaline and iridescent. Abdomen: the basal segment ferruginous, the third segment with a narrow white marginal fascia.

Hab. Africa. (Coll. F. Smith.)

66. *CERCERIS MILITARIS*.

Cerceris militaris, *Dahlb. Hym. Europ.* i. 224.

Hab. Africa.

67. *CERCERIS NIGRIFRONS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black, punctured: the scape in front, a short carina between the antennæ, and two minute spots on the face, yellow; the flagellum beneath, and the mandibles ferruginous, the apex of the former fuscous. Thorax coarsely punctured; the tegulæ yellow in front; the wings slightly coloured, with a fuscous cloud at their apical margins, that on the fore wings occupying the marginal cell, and darkest from thence to the apex of the wing; the legs ferruginous, with the anterior and intermediate tibiæ in front, and the basal joint of the tarsi pale testaceous; the tibiæ have a dark fusco-ferruginous stain behind; the apical joints of the tarsi fuscous above. Abdomen: the basal segment ferruginous; the second narrowed at the base, the third with a yellow band at its apical margin, the sixth entirely yellow; beneath, the second segment shining, with large scattered punctures; the following segments have some coarse punctures at the sides; the third has a yellow band at its apical margin.

Hab. Africa.

68. *CERCERIS ARGENTIFRONS*.

Cerceris argentifrons, *Guér. Icon. Règ. Anim.* 445.

Hab. Madagascar.

69. *CERCERIS NIGRO-CINCTA*.

B.M.

Female. Length 5 lines.—Black: the head, thorax, and basal segment of the abdomen, coarsely punctured; the second, third and fourth segments more finely and distantly punctured; the fifth more strongly so, as well as the sides of the sixth segment; the latter transversely rugose above. The clypeus, a large spot on each side of the face, and the scape in front, yellow, some-

mes of an orange colour; the flagellum fulvous beneath; the mandibles of a reddish-yellow, with their tips rufo-piceous. Thorax: a spot on each side of the collar, the tegulae, post-scutellum, and legs, orange; the second segment of the abdomen, the fourth and following segments orange; the first and third black.

Hab. Australia (Adelaide).

70. *CERCERIS ANTIPODES.*

B.M.

Female. Length 4 lines.—Black, punctured: the clypeus, sides of the face, the mandibles, and the carina between the antennæ, yellow; the flagellum fulvous beneath; a minute yellow spot behind the eyes. Thorax immaculate; the tegulae fulvous; the wings slightly coloured with a fuscous cloud at the anterior margin of the superior pair towards their apex; the nervures ferruginous; the legs fulvo-ferruginous; the basal joint of the intermediate tarsi yellow; the posterior pair slightly fuscous; the coxæ and base of the femora black. Abdomen: the second, fourth and fifth segments of an orange-yellow; the fourth segment more or less black at the base; beneath, the base of the segments rufo-piceous.

Male.—This sex differs in having the scape yellow in front, two minute spots on the vertex, two spots on the collar, two on the scutellum, the post-scutellum, and two minute spots on the metathorax, orange-yellow; the sixth and seventh segments yellow.

Hab. Australia.

71. *CERCERIS BIFASCIATA.*

Cerceris bifasciata, Guér. *Icon. Règ. Anim.* 443. t. 71. f. 9.

Hab. Bengal.

72. *CERCERIS FLAVO-PICTA.*

B.M.

Female. Length 4–4½ lines.—Head yellow, the vertex black, with a transverse yellow line behind, and a black stripe running downwards to each antenna; the clypeus projecting, the apex truncate; the antennæ ferruginous, with the scape yellow in front; the tips of the mandibles black. Thorax yellow, the disk of the mesothorax black, a black line behind the wings, running downwards obliquely to the posterior coxæ; a central black stripe down the metathorax, the subcordiform space at the base of the metathorax smooth and shining; the wings hyaline, with a dark fuscous spot at the apex of the anterior pair; legs

white; the flagellum fulvous beneath. Thorax: a white spot on the tegulæ in front; the tibiæ and tarsi pale testaceous, the femora rufo-testaceous as well as the posterior tibiæ and tarsi; wings fulvo-hyaline and iridescent. Abdomen: the basal segment ferruginous, the third segment with a narrow white marginal fascia.

Hab. Africa. (Coll. F. Smith.)

66. *CERCERIS MILITARIS.*

Cerceris militaris, *Dahlb. Hym. Europ.* i. 224.

Hab. Africa.

67. *CERCERIS NIGRIFRONS.*

B.M.

Male. Length $4\frac{1}{4}$ lines.—Black, punctured: the scape in front, a short carina between the antennæ, and two minute spots on the face, yellow; the flagellum beneath, and the mandibles ferruginous, the apex of the former fuscous. Thorax coarsely punctured; the tegulæ yellow in front; the wings slightly coloured, with a fuscous cloud at their apical margins, that on the fore wings occupying the marginal cell, and darkest from thence to the apex of the wing; the legs ferruginous, with the anterior and intermediate tibiæ in front, and the basal joint of the tarsi pale testaceous; the tibiæ have a dark fusco-ferruginous stain behind; the apical joints of the tarsi fuscous above. Abdomen: the basal segment ferruginous; the second narrowed at the base, the third with a yellow band at its apical margin, the sixth entirely yellow; beneath, the second segment shining, with large scattered punctures; the following segments have some coarse punctures at the sides; the third has a yellow band at its apical margin.

Hab. Africa.

68. *CERCERIS ARGENTIFRONS.*

Cerceris argentifrons, *Guér. Icon. Règ. Anim.* 445.

Hab. Madagascar.

69. *CERCERIS NIGRO-CINCTA.*

B.M.

Female. Length 5 lines.—Black: the head, thorax, and basal segment of the abdomen, coarsely punctured; the second, third and fourth segments more finely and distantly punctured; the fifth more strongly so, as well as the sides of the sixth segment; the latter transversely rugose above. The clypeus, a large spot on each side of the face, and the scape in front, yellow, some-

times of an orange colour; the flagellum fulvous beneath; the mandibles of a reddish-yellow, with their tips rufo-piceous. Thorax: a spot on each side of the collar, the tegulæ, post-scutellum, and legs, orange; the second segment of the abdomen, the fourth and following segments orange; the first and third black.

Hab. Australia (Adelaide).

70. *CERCERIS ANTIPODES.*

B.M.

Female. Length 4 lines.—Black, punctured: the clypeus, sides of the face, the mandibles, and the carina between the antennæ, yellow; the flagellum fulvous beneath; a minute yellow spot behind the eyes. Thorax immaculate; the tegulæ fulvous; the wings slightly coloured with a fuscous cloud at the anterior margin of the superior pair towards their apex; the nervures ferruginous; the legs fulvo-ferruginous; the basal joint of the intermediate tarsi yellow; the posterior pair slightly fuscous; the coxæ and base of the femora black. Abdomen: the second, fourth and fifth segments of an orange-yellow; the fourth segment more or less black at the base; beneath, the base of the segments rufo-piceous.

Male.—This sex differs in having the scape yellow in front, two minute spots on the vertex, two spots on the collar, two on the scutellum, the post-scutellum, and two minute spots on the metathorax, orange-yellow; the sixth and seventh segments yellow.

Hab. Australia.

71. *CERCERIS BIFASCIATA.*

Cerceris bifasciata, Guér. *Icon. Règ. Anim.* 443. t. 71. f. 9.

Hab. Bengal.

72. *CERCERIS FLAVO-PICTA.*

B.M.

Female. Length 4–4½ lines.—Head yellow, the vertex black, with a transverse yellow line behind, and a black stripe running downwards to each antenna; the clypeus projecting, the apex truncate; the antennæ ferruginous, with the scape yellow in front; the tips of the mandibles black. Thorax yellow, the disk of the mesothorax black, a black line behind the wings, running downwards obliquely to the posterior coxæ; a central black stripe down the metathorax, the subcordiform space at the base of the metathorax smooth and shining; the wings hyaline, with a dark fuscous spot at the apex of the anterior pair; legs

76. *CERCERIS ORIENTALIS*.

B.M.

Female. Length $10\frac{1}{2}$ lines.—Reddish-brown: the tips of the mandibles and the basal margins of the second and three following segments of the abdomen black; the clypeus elevated, deeply and widely emarginate, forming a crescent-shaped appendage; the wings yellow, with a fuscous border to their apical margins; the nervures pale rufo-testaceous.

The male differs in having the mesothorax and also the vertex fuscous, the face reddish-yellow, and the apical joint of the antennæ bent.

Hab. Madras. (Coll. Walter Elliott, Esq.)

77. *CERCERIS VIGILANS*.

B.M.

Male. Length $5-5\frac{1}{2}$ lines.—Head and thorax black, opaque; the clypeus and a line above terminating in a point at the anterior ocellus, a broad stripe at the inner orbit of the eyes, yellow; the flagellum ferruginous beneath, the apical joint bent; the vertex and cheeks with a thin hoary pubescence. Thorax: the sides of the thorax, the metathorax and the coxa and femora with thin hoary pubescence; a white stripe on the tibiae outside, and the basal joint of the intermediate tarsi, white; wings fuscous, with a darker cloud at their apex. Abdomen ferruginous, the basal and two apical joints black; an interrupted broad white fascia on the basal segment.

Hab. Madras. (Coll. Walter Elliott, Esq.)

78. *CERCERIS PICTIVENTRIS*.

Cerceris pictiventris, *Dahlb. Hym. Europ. Synop. Sp. i.* 498.

Hab. Java.

79. *CERCERIS FULIGINOSA*.

B.M.

Female. Length $6\frac{1}{2}$ lines.—Black, immaculate; the face covered with cinereous pubescence; the head and thorax opaque. Thorax rugose, the scutellum longitudinally striated, the stria punctured; the triangular space at the base of the metathorax obliquely striated; wings dark fuscous, the posterior pair paler. Abdomen slightly shining, not very closely punctured.

Hab. Celebes. (Coll. Madame Ida Pfeiffer.)

80. *CERCERIS FEROX*.

Female. Length $5\frac{1}{2}$ lines.—Black, the head and thorax closely punctured; the head wider than the thorax, the face widest anteriorly; the clypeus, the carina above it, a large semicircular

the anterior and posterior margins of the mesothorax beneath, black; sometimes a yellow spot beneath the wings; the wings hyaline, with a dark fuscous spot at the apex of the anterior pair, the nervures ferruginous; the legs ferruginous, variegated with yellow. Abdomen ferruginous; a transverse spot at the base of the second segment, the third and fifth segments, yellow; the third segment has sometimes a broad emarginate band, the emargination being black or ferruginous; the extreme base of the segments usually black.

The male closely resembles the female, but the colours are brighter; the mesothorax is usually more or less black; the subcordate space at the base of the metathorax is black in both sexes and striated; the legs are more variegated with yellow and the posterior tibiae are fuscous at their apex.

Hab. India; China.

This species varies considerably in the colouring, scarcely two individuals being exactly alike; in some examples the vertex is black, with one or two ferruginous stripes; others are entirely ferruginous, with yellow spots and bands.

75. *CERCERIS MASTOGASTER*.

B.M.

Female. Length 6 lines.—Black, punctured: the scape in front, the clypeus, sides of the face, the carina between the antennae and the base of the mandibles, yellow; the flagellum fulvous beneath; the head has a thin hoary pubescence, that on the clypeus more bright and silvery. Thorax: a spot on each side of the collar, the post-scutellum, and a spot on the tegulae, cream-coloured; wings slightly coloured, with a dark cloud or spot beyond the marginal cell; the nervures fusco-testaceous; the tibiae and tarsi of a yellowish-white, the anterior and intermediate femora at their apex beneath, with a white spot; the posterior femora and coxae ferruginous; all the tibiae have a fuscous stain beneath; the metathorax, three basal segments of the abdomen and a spot in the middle of the fourth segment, ferruginous; the subcordate space at the base of the metathorax black, smooth, and shining, with a few striae at the base; two spots at the base of the second segment of the abdomen and a large one on each side of the third and fifth segments, white: beneath, the third, fourth and fifth segments have on each side a small erect plate, concave within; viewed sideways having the appearance of rows of teats; the segments, except the apical one, ferruginous.

Hab. Madras. (Coll. Walter Elliott, Esq.)

76. *CERCERIS ORIENTALIS*.

B.M.

Female. Length $10\frac{1}{2}$ lines.—Reddish-brown: the tips of the mandibles and the basal margins of the second and three following segments of the abdomen black; the clypeus elevated, deeply and widely emarginate, forming a crescent-shaped appendage; the wings yellow, with a fuscous border to their apical margins; the nervures pale rufo-testaceous.

The male differs in having the mesothorax and also the vertex fuscous, the face reddish-yellow, and the apical joint of the antennæ bent.

Hab. Madras. (Coll. Walter Elliott, Esq.)

77. *CERCERIS VIGILANS*.

B.M.

Male. Length $5-5\frac{1}{2}$ lines.—Head and thorax black, opaque; the clypeus and a line above terminating in a point at the anterior ocellus, a broad stripe at the inner orbit of the eyes, yellow; the flagellum ferruginous beneath, the apical joint bent; the vertex and cheeks with a thin hoary pubescence. Thorax: the sides of the thorax, the metathorax and the coxa and femora with thin hoary pubescence; a white stripe on the tibiæ outside, and the basal joint of the intermediate tarsi, white; wings fuscous, with a darker cloud at their apex. Abdomen ferruginous, the basal and two apical joints black; an interrupted broad white fascia on the basal segment.

Hab. Madras. (Coll. Walter Elliott, Esq.)

78. *CERCERIS PICTIVENTRIS*.

Cerceris pictiventris, *Dahlb. Hym. Europ. Synop. Sp. i.* 498.

Hab. Java.

79. *CERCERIS FULIGINOSA*.

B.M.

Female. Length $6\frac{1}{2}$ lines.—Black, immaculate; the face covered with cinereous pubescence; the head and thorax opaque. Thorax rugose, the scutellum longitudinally striated, the striae punctured; the triangular space at the base of the metathorax obliquely striated; wings dark fuscous, the posterior pair paler. Abdomen slightly shining, not very closely punctured.

Hab. Celebes. (Coll. Madame Ida Pfeiffer.)

80. *CERCERIS FEROX*.

Female. Length $5\frac{1}{2}$ lines.—Black, the head and thorax closely punctured; the head wider than the thorax, the face widest anteriorly; the clypeus, the carina above it, a large semicircular

spot on each side of the face, the face on each side of the clypeus, the mandibles, and a line on the inner side of the scape, yellow; an ovate spot behind the eyes, and two oblong spots placed obliquely on the vertex, yellow. Thorax: a spot on each side of the collar, another beneath the wings, the margins of the tegulae, the scutellum, post-scutellum, sides and apex of the metathorax, yellow; the enclosed subcordate space longitudinally striated at the base; the wings slightly coloured, a fuscous cloud on the anterior margin of the superior pair; the legs yellow, a fuscous stripe on the femora above, and on the intermediate and posterior tibiae behind; the apical joints of the tarsi ferruginous, the posterior pair fusco-ferruginous. Abdomen: the first segment somewhat elongate and deeply punctured; the following segments smooth and shining; a minute yellow spot towards the apex of the first segment above, two placed obliquely at the base of the second, its apical margin with a narrow yellow band, interrupted on each side, the third, fourth and fifth segments with narrow bands on their apical margins which are broadly expanded at the sides of the abdomen; beneath, the second, third and fourth segments with a large angular spot on each side.

Hab. Sumatra. (Coll. F. Smith.)

81. *CERCERIS BICORNUTA*.

B.M.

Female. Length 6 lines.—Black: the clypeus, a tridentate spot above, the mandibles, a line behind the eyes, two minute spots on the vertex, and the scape in front, yellow; the flagellum fulvous beneath; the clypeus elevated, deeply emarginate, forming two horns, rounded at their apex. Thorax: an interrupted line on the collar, a band beneath the wings, which crosses the breast, the tegulae, two large spots on the scutellum, the post-scutellum, and a large macula on each side of the metathorax, yellow; the wings slightly coloured, with a fuscous cloud extending from the base of the marginal cell to the apex of the wings; the legs yellow, more or less ferruginous above. Abdomen: the sides of the basal segment and a band at the basal margin of the second segment yellow; another on the apical margin, as well as on the apical margins of the three following; beneath, yellow; the apical margins of the segments rufo-testaceous; the apical margin ferruginous.

Hab. North China.

82. *CERCERIS FERVIDA*.

B.M.

Female. Length 8 lines.—Black, closely and strongly punctured; the face below the antennae yellow; the clypeus produced

and acute in the middle; a yellow spot on the mandibles at their base; the metathorax with a triangular-shaped space at the base in the centre, which is obliquely striated; wings dark fuscous; the legs ferruginous, with a yellow stripe in front of the anterior and intermediate tibiæ and tarsi; the posterior tibiæ serrated exteriorly, and covered with shining pile within. Abdomen: the first, second, and base of the third segment ferruginous; the apical portion of the third segment yellow, with a slight emargination in the middle; the sixth ventral segment armed with an acute spine on each side at the apex.

Hab. North China. (Coll. R. Fortune, Esq.)

83. *CERCERIS SINENSIS*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the face below the antennæ, the scape in front, and the mandibles, yellow, the tips of the latter ferruginous; the apex of the clypeus slightly elevated. Thorax: the collar, a spot behind the tubercles, the tegulæ, two spots on the scutellum, the post-scutellum, and an ovate macula on the posterior lateral angles of the metathorax, yellow; wings subhyaline, with a fuscous cloud occupying the marginal cell and extending to the apex of the wing; legs yellow, the base of the coxæ, and of the anterior and intermediate femora, black; the posterior femora black, with their extreme apex yellow; the posterior tibiæ above, except their base, and the tarsi, rufopiceous. Abdomen: the first segment with a narrow yellow band on its apical margin, the second segment with a large macula at its base, and another smaller spot on each side of its apical margin, the three following segments with a yellow band on their apical margins, yellow; the three bands attenuated in the middle; beneath, the second, third and fourth segments with transverse attenuated yellow bands in the middle; the second segment sometimes yellow, with a dark macula in the middle.

Hab. North China.

84. *CERCERIS UNIFASCIATA*.

B.M.

Female. Length 4 lines.—Black: the face below the antennæ, the scape in front, and the mandibles, yellow; the flagellum fulvous beneath. Thorax: an obscure line on the collar laterally, a spot on the tegulæ in front, and the post-scutellum, yellow; a minute spot on each side of the metathorax; the wings subhyaline, the apex of the anterior wings with a dark fuscous cloud, which also occupies the marginal cell; the apex of the coxæ, the trochanters, and tips of the femora, the anterior and intermediate

tibiæ and tarsi, yellow; the tibiæ with a ferruginous stain behind. Abdomen: the third segment with a broad yellow band on its apical margin, the margins of the segments narrowly yellow-testaceous; beneath, the apical margins of the segments are yellow.

Hab. North China.

85. *CERCERIS ZONALIS*.

B.M.

Cerceris zonalis, *Smith, Trans. Ent. Soc. Lond. new ser.*

Female. Length 6 lines.—Black and punctured; the scape in front, the face below the antennæ and the mandibles, yellow; the flagellum fulvous beneath; the face with a short thin silvery pubescence. Thorax: the collar and post-scutellum fulvous; the tegulæ pale rufo-testaceous; the wings slightly coloured, with a smoky cloud along the anterior margin of the superior pair; the legs dark rufo-piceous, the joints paler, with the tibiæ and tarsi yellow beneath. Abdomen: the first segment ferruginous, with the base black; the third, with a yellow band on its apical margin and an indistinct one on the fifth, obscure reddish-yellow; the margins of all the segments rufo-piceous above and beneath.

Hab. North China. (Coll. R. Fortune, Esq.)

86. *CERCERIS AQUILINA*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black and punctured; the clypeus elevated from its base; the carina between the antennæ much elevated and slightly arched, when viewed sideways in conjunction with the clypeus, forming a kind of beak; the clypeus, sides of the face and the cheeks, pale testaceous, and covered with short silvery pile; the base of the mandibles yellowish, as well as the scape in front; the flagellum ferruginous beneath towards the base. Thorax: the collar, tegulæ in front, the scutellum, two spots on the post-scutellum, and a spot on each side of the metathorax, yellow-testaceous; the wings subhyaline, with a dark fuscous cloud occupying the marginal cell, and extending to the apex of the wing; the anterior and intermediate femora beneath yellowish-white; the tibiæ and tarsi testaceous; the posterior tibiæ testaceous at the base, the tarsi fuscous; the intermediate tibiæ with a dark stain behind. Abdomen: the apical margin of the first, fourth and fifth segments testaceous yellow; the two latter dilated at the sides, the second and apical segments entirely testaceous; the extreme base of the second segment black; the extreme margin of the segments more or less ferruginous; beneath, the margins of the segments

broadly testaceous; the four apical segments distantly punctured.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

87. *CERCERIS ATRICEPS*.

B.M.

Female. Length 5 lines.—Black and punctured; the basal joint of the flagellum obscurely ferruginous beneath; the face covered with silvery pubescence. Thorax: a line on the outer margin of the tegulae, and the post-scutellum, yellow; the subcordiform space at the base of the metathorax smooth and shining, with an impressed line down the centre; the wings hyaline, with a fuscous stain along the anterior margin of the superior pair; the tibiae with a testaceous stripe in front, and the posterior femora testaceous at their apex beneath. Abdomen: a narrow orange-yellow band on the apical margin of the third segment; the abdomen is thinly covered with short hoary pile, most observable at the sides and beneath.

Hab. Brazil (Para). (Coll. H. W. Bates.)

88. *CERCERIS BASALIS*.

Female. Length 5 lines.—Black and strongly punctured; an abbreviated line at the inner orbit of the eyes, and the base of the mandibles, yellow. Thorax: a narrow yellow line on the posterior margin of the scutellum; the tibiae in front, and the anterior and intermediate tarsi beneath, yellow; the tips of the femora yellow beneath; the wings with a fulvous stain towards their base; a fuscous cloud occupies the first submarginal and the marginal cells, and extends to the apex of the wings, the nervures ferruginous; the subcordate enclosed space at the base of the metathorax coarsely punctured. Abdomen covered with a fine changeable silky pile; the first segment not so narrow as is usual in the genus, and widest at its apex; the third and following segments yellow; the segments beneath with yellow bands on their apical margins; the fifth and sixth yellow.

Hab. Brazil. (Coll. F. Smith.)

89. *CERCERIS IMITATOR*.

B.M.

Male. Length 5 lines.—Head and thorax black and shining, strongly punctured; the scape in front, face and mandibles, yellowish-white; the flagellum pale testaceous towards the base beneath; the collar, tegulae in front, and two transverse ovate spots in the middle of the metathorax, yellowish-white, the legs beneath are of the same colour; the posterior tarsi fuscous; the

wings hyaline, with a fuscous cloud at their apex. Abdomen ferruginous, with the basal and two apical segments black and strongly punctured, with a short silky pubescence beneath; the first segment with a broad emarginate yellow band on its apical margin; a narrow yellow line on the apical margin of the fifth segment laterally, an uninterrupted one on the sixth, and the sides of the seventh yellow.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

90. *CERCERIS INTRICATA*.

B.M.

Male. Length 5 lines.—Black: the face, scape in front, and the mandibles, yellow; a minute yellow spot behind the eyes, and a large one on the cheeks; the flagellum of a testaceous yellow beneath. Thorax: a minute spot on each side of the collar, a line on each side of the prothorax anteriorly, a spot beneath the wings, a curved line on each side of the pectus, a spot on the tegulæ in front, another on each side of the scutellum, the post-scutellum, a line down the middle of the subcordate space at the base of the metathorax, two ovate spots beneath it, and a minute one on the posterior lateral angles of the metathorax, yellow; wings hyaline, with a broad dark fuscous cloud on the anterior margin of the superior pair; the legs yellow beneath; the anterior and intermediate tarsi yellow, the tips of the joints slightly ferruginous above; the posterior pair black, the joints slightly dilated and bordered with bright silky pile within; the head and sides of the thorax with a thin short cinereous pubescence. Abdomen: the sides and posterior margin of the basal segment yellow; a narrow yellow band on the posterior margins of the four following segments; beneath, the first segment yellow, the second with a spot at the base and one on each side; the following segments are more or less spotted on each side, and thinly covered with silky pubescence.

The male differs in being smaller and in having more yellow on the collar and scutellum; the posterior tibiæ are yellow at their base.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

91. *CERCERIS LATRO*.

B.M.

Female. Length 4 lines.—Black and punctured: the clypeus elevated, forming an obtuse tubercle, rounded above and flattened beneath, the lower or flattened side pale testaceous; the sides of the face, mandibles, and scape beneath, of the same colour; the flagellum fulvous beneath. Thorax: an interrupted narrow line on the collar, a spot on each side of the scutellum, the post-

scutellum, and a stripe on each side of the thorax, yellow; the wings slightly coloured, with a dark fuscous cloud on the anterior margin of the superior pair; the nervures rufo-testaceous, brightest at the base of the wings; the tegulæ ferruginous; the legs fuscous above and yellow beneath; the coxæ and posterior femora fuscous, their apex testaceous; the posterior tarsi fuscous. Abdomen: the apical half of the first segment yellow; the apical margin of the third segment with a narrow yellow band; the apical margins of all the segments very narrowly testaceous; beneath, the margins have a very narrow yellow band.

Hab. Brazil (Para). (Coll. H. W. Bates.)

92. *CERCERIS MARGINATA*.

B.M.

Female. Length 5 lines.—Black: the clypeus, sides of the face as high as the antennæ, a triangular spot above the clypeus, the carina above the antennæ, the mandibles, and scape in front, yellow; the flagellum fulvous beneath; the tips of the mandibles ferruginous. Thorax: the collar transverse, straight, not arched, angulated on each side; the collar, tubercles, two spots on the scutellum, a transverse interrupted line on the post-scutellum, an oblique line on each side of the subcordate space at the base of the metathorax, and a stripe on each side of the metathorax, yellow; the punctures on the metathorax coarse, and running into longitudinal striæ; the subcordate space at the base of the metathorax transversely grooved, with a central longitudinal impressed line which passes downwards to the apex of the metathorax; the metathorax with large deep scattered punctures; the coxæ, trochanters, and femora beneath, yellow; the tibiæ in front, and the anterior and intermediate tarsi, yellow; the apical joints of the intermediate tarsi and the posterior pair fuscous; the wings hyaline, with a fuscous spot at the apex of the externo-medial cell, and a cloud occupying the marginal cell and extending to the apex of the wing. Abdomen strongly but not closely punctured; the sides and apex of the first segment yellow; a yellow band on the apical margin of the third and three following segments; the apical segment entirely yellow, with a black spot in the middle of its base.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

93. *CERCERIS RIXOSA*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black and coarsely punctured; the face, scape in front, and the mandibles, yellow; the flagellum fulvous beneath. Thorax: the tegulæ and post-scutellum yel-

low; the subcordate space at the base of the metathorax longitudinally striated; the apex of the coxæ, the intermediate and posterior trochanters, and the apex of the anterior pair, yellow; the anterior and intermediate tibiæ and tarsi yellow, the tibiæ with a dark stain behind; the posterior tibiæ yellow beneath; wings hyaline, the anterior pair with a fuscous cloud at their apex. Abdomen: the third segment yellow, with the extreme base black; the three following segments with a narrow yellow band on their apical margins; a yellow spot on the apical segment at its base.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

94. *CERCERIS RUGOSA*.

B.M.

Female. Length 4 lines.—Black: coarsely punctured, the punctures on the disk of the thorax running into longitudinal striæ, on the abdomen they are large, deep, and confluent; the face, mandibles, and scape in front, yellow; the face covered with silvery pubescence; the flagellum fulvous beneath, the apical joint entirely so. Thorax: a yellow line on the posterior margin of the scutellum; the anterior and intermediate tibiæ in front, and the tarsi, yellow; the posterior femora at their apex in front yellow; the tibiæ and tarsi black; the wings hyaline, a fuscous cloud on the anterior margin of the superior pair. Abdomen: a broad yellow band on the posterior margin of the first segment and a narrow one on that of the third; beneath, a pale lunate spot in the middle of the second segment.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

95. *CERCERIS SÆVISSIMA*.

B.M.

Female. Length 4 lines.—Black and strongly punctured; the face below the antennæ and the mandibles pale testaceous, the tips of the latter ferruginous; the clypeus slightly elevated; the flagellum fulvous beneath. Thorax: a narrow indistinct line on the collar, the tegulæ, two spots on the clypeus, an indistinct narrow line on each side of the subcordiform space at the base of the metathorax, and a narrow line at the sides, of an orange-yellow; the wings slightly coloured, with a dark fuscous cloud on the anterior margin of the superior pair; the tips of the coxæ and trochanters pale testaceous; the anterior and intermediate femora yellow beneath; the posterior pair rufo-testaceous beneath; the anterior tibiæ and tarsi yellow, the tibiæ black above. Abdomen: the apical margin of the basal segment pale testaceous-yellow; the second segment black, the following tes-

taceous-yellow, with the extreme base of the third segment black; beneath, dark rufo-testaceous, with the apical margins of the segments pale testaceous.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

96. *CERCERIS SIMPLEX.*

B.M.

Female. Length 7 lines.—Black, punctured: the clypeus produced in front, obconic, slightly elevated; the flagellum fulvous beneath towards the base; the post-scutellum, a spot on the subcordate space at the base of the metathorax and two elongate spots beneath it, yellow; the legs fusco-ferruginous, brightest beneath; the anterior half of the fore wings dark fuscous, the posterior portion hyaline; the posterior wings slightly coloured. Abdomen: the sides and apical margin of the basal segment yellow; the sides of the abdomen and beneath thinly covered with a fine silky white pubescence.

The male differs in having a yellow line at the inner orbit of the eyes, and a yellow spot on each side of the metathorax, the spot on the subcordate space and also those below it being obsolete.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

97. *CERCERIS TRICOLOR.*

B.M.

Female. Length 5 lines.—Black: the face yellow; the scape in front, the base of the mandibles and a large spot on the cheeks, yellow; the vertex ferruginous, with a large black spot on the front, which encloses the ocelli; the antennæ ferruginous, the flagellum fuscous above towards the apex. Thorax: the collar, a spot in front of the tegulæ, two beneath the wings, another on each side of the scutellum and the post-scutellum, yellow; the sides of the metathorax ferruginous; wings fusco-hyaline, with a darker cloud at their apical margins; the nervures fuscous, the costal nervure and stigma pale ferruginous; the legs ferruginous, with the tibiæ yellowish in front. Abdomen: the basal half of the first segment ferruginous, the apical half yellow; the apical margins of the third and fifth segments with a narrow yellow band; beneath, immaculate.

The male differs in having the vertex and metathorax black; the first segment of the abdomen is black at the base; the markings are the same, with the addition of two transverse spots on the vertex.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

98. *CERCERIS VIDUATA*.

B.M.

Female. Length 6 lines.—Black: the punctures deep and close on the face, but more distant on the vertex; the clypeus elevated, forming a somewhat conical tubercle, subacute at the apex, the extreme apex black, the rest of the clypeus yellow; a line on the inner orbit of the eyes, not running higher than the antennæ, a large macula on the anterior angles of the face, the middle of the mandibles outside, and the carina between the antennæ, yellow; a yellow stripe crossing the vertex behind the eyes; the extreme base of the flagellum beneath fulvous; the face with short golden pubescence at the sides. Thorax: the mesothorax opaque, the punctures shallow and distant; an interrupted line on the collar, a spot beneath the wings, the front of the tegulæ, a spot on each side of the scutellum, the post-scutellum, two longitudinal stripes on the metathorax, extending from the apex halfway towards the base, yellow; the fore wings with a fuscous cloud along their anterior margins; the anterior legs with a yellow stripe on the femora beneath; the tibie in front and the basal and apical joints of the tarsi ferruginous; the intermediate and posterior legs with the coxæ and femora beneath, the intermediate tibie in front, the posterior tibie at their base beneath, yellow; the basal joint of the intermediate and posterior tarsi pale testaceous. Abdomen: the first segment black and strongly punctured, the apical margin yellow; the rest of the abdomen ferruginous, with a fuscous stain in the middle of the first segment, the following segments more or less fuscous; the second segment subpetiolate, with a narrow yellow band on the apical margin; beneath, the first segment yellow and carinated in the middle, the second yellow with a ferruginous stain in the middle.

This may possibly prove to be the female of the *C. binodis* of Spinola; but, independent of the different colouring of the abdomen, the sculpture is very different: in *C. binodis* the thorax is strongly punctured, whilst in the present species the punctures on the mesothorax are very delicate, not being visible without a magnifying power.

Hab. Brazil (Para). (Coll. H. W. Bates.)

99. *CERCERIS VULPINA*.

B.M.

Male. Length 5 lines.—Black, punctured: the face, scape in front, mandibles at their base, a large spot on the cheeks, a minute one behind the eyes, two minute ones on the vertex, yellow; the flagellum pale testaceous beneath. Thorax: an interrupted line on the collar united to a spot beneath the wings,

a curved line on each side of the pectus, two in front of the anterior coxæ, two on the prothorax beneath, the tegulæ, two lines on the disk of the mesothorax, a spot on each side of the scutellum, the post-scutellum, and the metathorax, yellow; the sides of the subcordate space, and an angular spot beneath it, black; the anterior margins of the fore wings fuscous; the coxæ and trochanters yellow beneath, the femora and tibiæ yellow in front; the anterior and intermediate tarsi yellow. Abdomen: the basal segment yellow, with a black spot in the middle of its base; the four following segments with a narrow yellow band on their apical margins.

Hab. Brazil.

100. *CERCERIS BINODIS.*

B.M.

Cerceris binodis, *Spin. Ann. Soc. Ent. Fr.* x. new ser. 117. t. 3. f. 3 ♂ (1841).

Diamma Spinole, *Dahlb. Hym. Europ.* i. 225. 1.

Diesmus Spinolæ, *Dahlb. Hym. Europ. Synop. Spec.* i. 502. 1.

Hab. Cayenne; Brazil (Villa Nova). (Coll. H. W. Bates.)

This species has the appearance of a wasp, closely resembling some of the species of the genus *Zethus*; on closer inspection it will be found to be a *Cerceris*, differing from the generality of the species in having the basal segment ovate, and the second campanulate: in other respects it offers no remarkable difference. The neuration of the wings is identical with *Cerceris*.

101. *CERCERIS CRIBROSA.*

Cerceris cribrosa, *Spin. Ann. Soc. Ent. Fr.* x. new ser. 119. 74 ♀ ♂ (1841).

Hab. Cayenne.

102. *CERCERIS DILATATA.*

Cerceris dilatata, *Spin. Ann. Soc. Ent. Fr.* x. new ser. 118. 73 ♂ (1841).

Hab. Cayenne.

103. *CERCERIS CHILENSIS.*

B.M.

Cerceris chilensis, *Spin. Gay's Chili*, vi. 344. 1. .

Hab. Chili. (Coll. F. Smith.)

104. *CERCERIS GAYI*.*Cerceris Gayi*, *Spin. Gay's Chili*, vi. 346. 2.*Hab.* Chili.105. *CERCERIS LÆVIGATA*.

B.M.

Female. Length 4 lines.—Black and very delicately punctured; the face, base of the mandibles, and a line behind the eyes, yellow; the flagellum fulvous beneath. Thorax: the collar, tubercles, a spot beneath the wings, the scutellum, and an oblong macula on each side of the post-scutellum, yellow; the anterior and intermediate tibiae, and the posterior pair at their base, yellow; the anterior tarsi yellow, with the apical joints slightly ferruginous, the intermediate and posterior pair fuscous; wings slightly coloured, with a fuscous cloud on the anterior margin of the superior pair. Abdomen very delicately and sparingly punctured and shining; the first segment with its apical margin yellow, a slight notch in the middle of the band; the second, third and fourth segments with a yellow fascia on their apical margins, very much attenuated in the middle and widened at the sides.

The male has a yellow band on the first and four following segments.

Hab. St. Domingo.106. *CERCERIS CLYPEATA*.

B.M.

Cerceris clypeata, *Dahlb. Hym. Europ.* i. 221.*Hab.* North America (Wilmington, Delaware). (Coll. E. Doubleday, Esq.)107. *CERCERIS DESERTA*.

B.M.

Cerceris deserta, *Say, Narr. Exped. St. Peter's River, Append.* p. 76.*Hab.* N. America (Missouri; Pennsylvania; North Carolina).108. *CERCERIS FUMIPENNIS*.

B.M.

Cerceris fumipennis, *Say, Bost. Journ.* i. 381. 1.*Hab.* N. America (Indiana).109. *CERCERIS SEXTA*.*Cerceris sexta*, *Say, Bost. Journ.* i. 382. 2.*Hab.* N. America (Missouri).

110. *CERCERIS NIGRESCENS*.

B.M.

Female. Length 5 lines.—Black: the sides of the face and the clypeus pale yellow, the margins of the latter black; the mandibles yellow at their base; the clypeus transverse, projecting from its base, very obsoletely emarginate in front; the flagellum slightly fulvous towards the base beneath. Thorax: a minute spot on each side of the collar, another on the tegulæ and the post-scutellum, yellow; the mesothorax sparingly punctured, the metathorax strongly so, the subcórdiform space at the base longitudinally striated; the anterior and intermediate tibiæ in front yellow; the tarsi ferruginous; the posterior legs entirely black; the wings subhyaline, the nervures ferruginous. Abdomen: the basal segment with a yellow spot on each side, the following segments with uninterrupted fasciæ narrowed in the middle; beneath, entirely black.

Hab. Nova Scotia.

111. *CERCERIS DUFOURII*.

Cerceris Dufourii, Guér. *Icon. Règ. Anim.* 444.

Hab. New Orleans.

112. *CERCERIS VERTICALIS*.

Female. Length 6 lines.—Black, thickly punctured; the head ferruginous behind the eyes; the scape and second joint of the flagellum ferruginous; the face below the antennæ yellow; the margins of the clypeus black; the mandibles ferruginous, their extreme base yellow. Thorax: the collar yellow, interrupted in the middle by a ferruginous spot; the post-scutellum and a spot on the tegulæ yellow; a large ferruginous blotch on each side of the metathorax; the wings smoky-hyaline; the legs ferruginous. Abdomen: the basal segment ferruginous, with a minute yellow spot on each side; the second segment yellow, with the basal margin and a produced quadrate spot in the middle ferruginous; the margins of the following segments with a narrow band which is widened at the sides; beneath, rufopiceous, brightest at the base.

Hab. Georgia. (Coll. F. Smith.)

113. *CERCERIS BICORNUTA*.

B.M.

Cerceris bicornuta, Guér. *Icon. Règ. Anim.* 443.

Hab. United States (New Orleans; Georgia; Delaware).

This species is very variable in colouring, the abdomen and

thorax being very indistinctly marked with fulvous; the post-scutellum is frequently yellow.

114. *CERCERIS ELEGANS*.

B.M.

Male. Length 3 lines.—Black, coarsely punctured; the face below the antennæ, the scape in front, and the mandibles, yellow, the tips of the mandibles ferruginous; the anterior margin of the clypeus rounded; the anterior angles of the face produced into small quadrate lobes; the flagellum and scape behind ferruginous. **Thorax:** a spot on each side of the collar and the tegulæ in front yellow; wings smoky-hyaline and beautifully iridescent; the legs yellow, with the coxæ and the femora at their base more or less rufo-piceous; the metathorax very coarsely rugose. **Abdomen:** the two basal segments ferruginous, the apical margin of the second segment yellow; an elongate yellow spot on each side of the following segments on their apical margins, the spots widest at the margins of the segments and pointed within. *Hab.* East Florida. (Coll. E. Doubleday, Esq.)

115. *CERCERIS RUFO-PICTA*.

B.M.

Male. Length 4 lines.—Black, coarsely punctured; the face yellow below the antennæ; the anterior margin of the clypeus black, crenulated, and angular; the anterior margin of the face has on each side an angular filament close to the eye; the mandibles yellow, their tips ferruginous; the antennæ ferruginous; the flagellum fuscous above towards the apex, the apex pale. The prothorax, tegulæ, scutellum, post-scutellum, with sometimes a spot on each side, and the legs, ferruginous; the wings fusco-hyaline, the apical margins of the anterior wings darkest. **Abdomen:** the two basal segments ferruginous; the apical margin of the third with a narrow ferruginous band; the fourth and following segments more or less banded at the sides with ferruginous or sometimes with reddish-yellow.

Hab. East Florida. (Coll. E. Doubleday, Esq.)

Genus 15. *PHILANTHUS*.

Vespa, pt., *Fabr. Syst. Ent.* 362 (1775).

Crabro, pt., *Rossi, Mant.* i. 138 (1792).

Philanthus, pt., *Fabr. Ent. Syst.* ii. 288 (1793).

Simplephilus, *Jurine, Hym.* 185 (1807).

Trachypus, *Klug, Berl. Mag.* iv. 43 (1810).

Anthophilus, *Dahlb. Hym. Europ.* i. 497 (1843-5).

Div. 1. *Abdomen sessile.*

1. PHILANTHUS TRIANGULUM.

B.M.

Vespa triangulum, *Fabr. Syst. Ent.* 373. 49 ♀. *Cab. Mus. Dom. Banks.*; *Sp. Ins.* i. 469. 68; *Mant. Ins.* 294. 82.

Villers, Entom. iii. 276. 25.

Christ. Hym. 136.

Oliv. Encycl. Méth. vi. 693. 116.

Vespa limbata, *Oliv. Encycl. Méth.* vi. 693. 118.

Crabro androgynus, *Rossi, Faun. Etrus. Mant.* i. 138. 305.

Philanthus pictus, *Panz. Faun. Germ.* 43. 23 ♂.

Fabr. Syst. Piez. 362. 5.

Philanthus apivorus, *Latr. Fourm.* 317. t. 12. f. 2 a, b.

Spin. Ins. Ligur. i. 95. 1.

Philanthus discolor, *Panz. Faun. Germ.* 63. 18 ♂.

Philanthus triangulum, *Fabr. Ent. Syst.* ii. 289. 2; *Syst. Piez.* 302. 4.

Duméril, Consid. t. 59. f. 6. 7.

Van d. Lind, Obs. ii. 122. 2.

Shuck. Foss. Hym. 246. 1.

Dahlb. Hym. Europ. i. 187. 115.

St. Farg. Hym. iii. 34. 2.

Wesm. Hym. Foss. Belg. 105. 6.

Simblephilus diadema, *Jurine*, t. 10. gen. 18 ♀.

Philanthus androgynus, *Curtis, Brit. Ent.* vi. t. 273 ♀.

Hab. Britain; France; Germany; Italy; Denmark.

2. PHILANTHUS CORONATUS.

B.M.

Philanthus coronatus, *Fabr. Ent. Syst.* ii. 288. 1; *Syst. Piez.* 301. 1.

Latr. Hist. Ins. iii. 367.

Panz. Faun. Germ. 84. 23.

Van d. Lind, Obs. ii. 121. 1.

Dahlb. Hym. Europ. i. 189. 116.

St. Farg. Hym. iii. 36. 3.

Simblephilus coronatus, *Jurine, Hym.* 188 ♀.

Hab. Italy; France.

3. PHILANTHUS VENUSTUS.

Crabro venustus, *Rossi, Faun. Etrus.* ii. 94. 889.

Philanthus venustus, *St. Farg. Hym.* iii. 37. 4.

Hab. France.

4. *PHILANTHUS MELLINIFORMIS*.

B.M.

Male. Length $3\frac{1}{4}$ lines.—Black: the face below the antennæ, a large ovate spot on the forehead in front of the anterior ocellus, the scape in front, and five or six of the basal joints of the flagellum in front, yellow; a spot at the base of the mandibles yellow. Thorax: the collar, tubercles, post-scutellum, tegulæ, tips of the femora, tibiæ and tarsi, yellow; the wings hyaline and iridescent, the nervures testaceous, with the stigma yellow. Thorax strongly punctured, with two elevated longitudinal carinæ in the middle, and an impressed line on each side over the tegulæ; the metathorax with a depression at its base surrounded by a smooth shining space. Abdomen shining, with strong scattered punctures; the basal segment with a broad interrupted yellow band in the middle, the second with two very large ovate yellow maculæ placed obliquely and uniting in the middle; the four following segments with narrow yellow fasciæ on their apical margins, the first two slightly interrupted; beneath, black.

Hab. Sicily.

5. *PHILANTHUS PULCHERRIMUS*.

B.M.

Female. Length 4 lines.—Black: the face below the antennæ, the mandibles, three basal joints of the flagellum, the scape, a coronet-shaped spot on the forehead, and a line behind the eyes, yellowish-white; the flagellum fulvous in front. Thorax shining, with deep scattered punctures; the collar, tubercles, and a spot behind them, the hinder margin of the scutellum, the post-scutellum, the tips of the femora, the tibiæ and tarsi, pale yellowish-white; the coxæ and femora more or less rufo-piceous; the wings hyaline, the nervures testaceous, the stigma yellow. Abdomen shining, with fine scattered punctures; the basal segment ferruginous, with a minute white spot on each side; the second segment with a broad waved fascia, the third spotted at the side, the fourth with a very broad fascia, the fifth with a narrow band on its apical margin, widened in the middle and at the sides, and the sixth entirely yellowish-white; beneath, with pale irregular bands.

Male.—Smaller, but very like the female; and the face is more convex; the scutellum is entirely pale; the abdomen has only two pale fasciæ, one on the second and another on the fourth segment.

Hab. India.

6. *PHILANTHUS SULPHUREUS*.

Male. Length 4 lines.—Sulphur-yellow, shining and strongly

punctured; the face below the antennæ white; the mandibles, the scape in front, and two or three of the basal joints of the flagellum, nearly white, the following joints becoming gradually dark fusco-ferruginous towards the apex; the eyes brown, a black line round them above, from which a line passes across the vertex, and a second across the forehead passing between the ocelli. Thorax: the mesothorax with three longitudinal black stripes united by a transverse line at the apical and basal margins; a black stripe at the extreme basal margin of the metathorax, an angular black spot in the middle, in which is a deep fossulet; wings hyaline, the nervures pale testaceous, the stigma yellow; the femora pale ferruginous, their base and apex yellow. Abdomen: the base and the apical margins of the segments ferruginous.

Hab. Northern India. (Coll. F. Smith.)

7. PHILANTHUS DEPRDATOR.

Male. Length $6\frac{1}{2}$ lines.—Ferruginous: the face as high as the emargination of the eyes, the scape in front, the cheeks, and the mandibles at their base, yellow. Thorax: the collar, sides of the breast, the tegulæ and a minute spot over them, the scutellum, post-scutellum, and a spot on each side of the metathorax, yellow; an oblong depression at the base of the metathorax in the middle, the depression black; the wings fulvo-hyaline, the nervures ferruginous; the apex of the wings clouded, the anterior pair darkest; the tibiæ and tarsi yellow; the anterior and intermediate femora yellow beneath. Abdomen: the second, third and fourth segments with a large yellow macula on each side; the fifth, sixth and seventh yellowish beneath; the second and third segments yellow, with their base narrowly ferruginous; the second segment has on each side a longitudinal black line terminating at the middle of the segment.

Hab. India. (Coll. F. Smith.)

8. PHILANTHUS PALLIDUS.

Philanthus pallidus, *Klug, Symb. Phys. dec. v. t. 47. f. 8 ♂*.

Hab. Ethiopia (Ambukohl).

9. PHILANTHUS DIMIDIATUS.

Philanthus dimidiatus, *Klug, Symb. Phys. dec. v. t. 47. f. 7 ♂*.

Hab. Ethiopia (Ambukohl).

10. *PHILANTHUS RAPTOR*.

Philanthus raptor, *St. Farg. Hym.* iii. 38. 5.

Lucas, Explo. Sc. Algér. iii. 259.

Hab. Algeria (Oran).

11. *PHILANTHUS DIADEMA*.

B.M.

Philanthus diadema, *Fabr. Ent. Syst.* ii. 289. 3, & *Cab. Mus. Dom. Banks.*; *Syst. Piez.* 302. 6.

Coqueb. Ill. Icon. Ins. dec. iii. t. 22. f. 1.

Philanthus Abdelkader, *St. Farg. Hym.* iii. 33. 1.

Lucas, Explo. Sc. Algér. iii. 257. t. 13. f. 7.

Hab. Africa (the Cape of Good Hope; Port Natal; the Gambia; Sierra Leone; Egypt; Algeria).

This species has been obtained from all the above localities; on examining a large number of specimens, it proves to be an insect subject to much variety. The most highly coloured individuals are from the Gambia: some specimens have the head and thorax ferruginous; there are two black spots above the tridentate spot on the face, and another which encloses the ocelli; the thorax has a black stain before the scutellum and another at the base of the metathorax, otherwise entirely ferruginous and yellow. Specimens from the Cape have usually less of the yellow and ferruginous colouring, and the scutellum is sometimes nearly or entirely black.

12. *PHILANTHUS FORMOSUS*.

B.M.

Male. Length 6 lines.—Black: the face as high as the emargination of the eyes, yellow; a minute black spot above the clypeus, and another above the insertion of each antenna; the mandibles and base of the flagellum ferruginous; the hinder margin of the vertex and cheeks ferruginous. Thorax: the collar with a narrow yellowish-white line, sometimes a yellow interrupted line on the post-scutellum; wings fuscous, palest at the hinder margin of the posterior pair; the nervures, tegulæ and legs ferruginous; the coxæ and sometimes the base of the femora black. Abdomen: the first segment, the apical margins of the four following, and the two apical segments entirely, ferruginous; the second segment has on each side at its base an oblong whitish macula pointed within; the third, fourth and fifth segments have a narrow undulating white marginal line.

Hab. Cape of Good Hope.

margin; a minute spot on each side of the basal segment; a broad interrupted fascia in the middle of the second segment; the third, fourth and fifth segments with a narrow fascia on their apical margins, abruptly widened at the lateral margins, yellow; beneath, black.

Hab. North America. (Coll. F. Smith.)

21. *PHILANTHUS VENTILABRIS.*

B.M.

Philanthus ventilabris, *Fabr. Ent. Syst. Supp.* 269. 11-12.

Anthophilus ventilabris, *Dahlb. Hym. Europ.* i. 497.

Hab. North Carolina; East Florida (St. John's Bluff). (Coll. E. Doubleday, Esq.)

22. *PHILANTHUS POLITUS.*

B.M.

Philanthus politus, *Say, Narr. Exped. St. Peter's River, Append.* p. 75. 2.

Hab. Pennsylvania.

23. *PHILANTHUS PUNCTATUS.*

B.M.

Philanthus (*Cheilopogon*) *punctatus*, *Say, Narr. Exped. St. Peter's River, Append.* ii. p. 75. 1.

Hab. Pennsylvania; North Carolina.

24. *PHILANTHUS CRABRONIFORMIS.*

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: the face below the antennæ, with a line continued upwards along the orbit of the eyes as high as the emargination, a large campanulate-shaped spot above the clypeus, a spot behind the eyes, two on the vertex, the mandibles, scape, and three basal joints of the flagellum in front, yellow; the head large, shining, finely but not closely punctured. Thorax: the hinder margin of the collar raised, yellow, and sub-interrupted in the middle; the tegulæ, tubercles, two spots beneath the wings, two on the scutellum, the post-scutellum, a spot at the lateral posterior angles of the metathorax, the apex of the femora, the tibiæ and the tarsi, yellow; the wings fulvo-hyaline, the nervures pale ferruginous, with a faint cloud beyond the marginal cell; the mesothorax smooth and shining, and having a few scattered punctures; in the middle is a deep longitudinal channel, and a finer one on each side; the posterior margin closely punctured in front of the scutellum. Abdomen shining, with deep scattered punctures; the first segment with a broad slightly interrupted band in the middle; the second seg-

ment has a broad band at its base, its hinder margin waved; the two following segments yellow, except their extreme base; the three apical segments entirely yellow.

Hab. California.

25. *PHILANTHUS FRIGIDUS*.

B.M.

Male. Length 5 lines.—Black, closely and rather finely punctured; the clypeus and an oblong spot above it, a minute spot between the antennæ, the sides of the face a little above the antennæ, the scape in front, the mandibles, and a short narrow line behind the eyes, yellow; the flagellum fulvous beneath; the face and cheeks with a thin cinereous pubescence; the eyes not emarginate. Thorax: the collar, tubercles, a spot in front of the tegulæ, a transverse line at the base of the scutellum, a spot on the post-scutellum, the tibiæ, tarsi, and tips of the femora, yellow; wings hyaline, the nervures pale ferruginous. Abdomen: an ovate spot on each side of the basal segment, a transverse slightly interrupted fascia a little before the apical margin of the second, a narrower one on the third, fourth and fifth segments, similarly situated and interrupted, yellow; a similar band on the three intermediate segments beneath, slightly interrupted and rather broader than the fasciæ above.

Hab. Nova Scotia. (Coll. Lieut. Redman.)

Div. 2. *Abdomen petiolated.*

26. *PHILANTHUS GOMESII*.

B.M.

Trachypus Gomesii, *Klug, Berl. Mag.* iv. 43. t. 1. f. 5.

Philanthus petiolatus, *Spin. Ann. Soc. Ent. Fr.* v. 121. 309. t. 3. f. 4 ♀ (1841).

Philanthus Gomesii, *Sauss. Mém. Soc. Phys. Genève*, xiv. 8. 1.

Simblephilus Spinolæ, *Dahlb. Hym. Europ.* i. 190. 43.

Hab. Brazil.

27. *PHILANTHUS DENTICOLLIS*.

Trachypus denticollis, *Spin. Gay's Chili*, vi. 335. 1.

Hab. Chili.

28. *PHILANTHUS PATAGONENSIS*.

Philanthus (Trachypus) Patagonensis, *Sauss. Mém. Soc. Phys. Genève*, xiv. 10. 4. t. f. 1 ♂.

Hab. Patagonia.

29. *PHILANTHUS ROMANDI*.

Philanthus (Trachypus) Romandi, *Sauss. Mém. Soc. Phys. Genève*,
xiv. 8. 3 ♀.

Hab. Brazil.

30. *PHILANTHUS (TRACHYPUS) ELEGANS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: the head closely punctured, the face below the antennæ covered with silvery pubescence; a minute spot on each side of the clypeus in front, another at the anterior part of the emargination of the eyes, the scape, and a spot at the base of the mandibles, yellow; the scape with a black spot behind; the two basal joints of the flagellum and also the apical one fulvous. Thorax: the mesothorax shining, with scattered punctures, and having anteriorly three deeply impressed lines which extend to the disk; the collar (which is raised and has the lateral angles rounded), the tubercles, a spot beneath the wings, another on the tegulæ in front, two at the base of the scutellum, the post-scutellum, and two elongate spots at the apex of the metathorax, yellow; the wings hyaline, with a narrow fuscous line running from the stigma to the apex of the wing; the tips of the anterior and intermediate femora, the tibiæ and tarsi, yellow; the posterior tibiæ with a yellow stripe above, not extending to their apex; the tarsi white, with the tips of the joints fuscous; the anterior and intermediate tibiæ with a rufopiceous stain beneath. Abdomen: the extreme apex yellow; the second segment with a waved yellow fascia a little before its apical margin, continued beneath; the second segment has a narrow fascia a little before its apical margin, emarginate or interrupted on each side; the following segments have each a continuous fascia; beneath, the margins are yellowish on each side.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

31. *PHILANTHUS (TRACHYPUS) APICALIS*.

B.M.

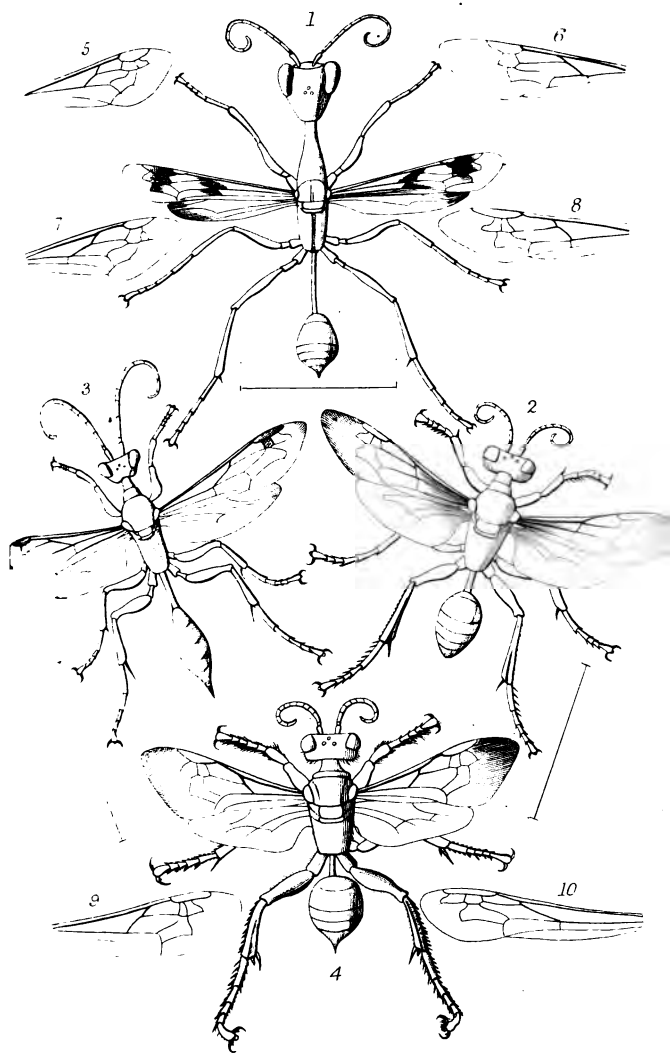
Male. Length 5–6 lines.—Black and shining; head strongly and closely punctured; the anterior stemma placed in a fossulet from which an impressed line passes down to the insertion of the antennæ, below which the face is covered with a golden pubescence; the first joint of the flagellum of a yellowish-white beneath; the apical joint truncated at the tip, which is of an orange-yellow. Thorax: the mesothorax strongly punctured, with a deep central depression at its base; the base of the metathorax smooth and shining, with a central abbreviated impressed line, which termi-

nates in a deep fovea at the verge of the truncation ; immediately beneath is a second fovea, which extends to the apex ; the sides of the metathorax closely and finely punctured ; the anterior and intermediate tibiæ and all the tarsi yellowish-white ; the apex of the tarsal joints rufo-piceous ; the anterior and intermediate femora yellow at their apex in front ; the anterior tibiæ with a row of cilia beneath ; the collar yellow, transverse, elevated, with the lateral angles acute ; a spot on the tegulæ in front, the post-scutellum, and a longitudinal line at the apex of the metathorax on each side of the insertion of the petiole of the abdomen, yellow ; the wings hyaline, with a fuscous spot at the apex of each wing ; the apex of the petiole with a spot on each side ; the first, third, fourth and fifth segments with a narrow fascia on their apical margins, the three latter fasciæ bisinuated on their anterior margins.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

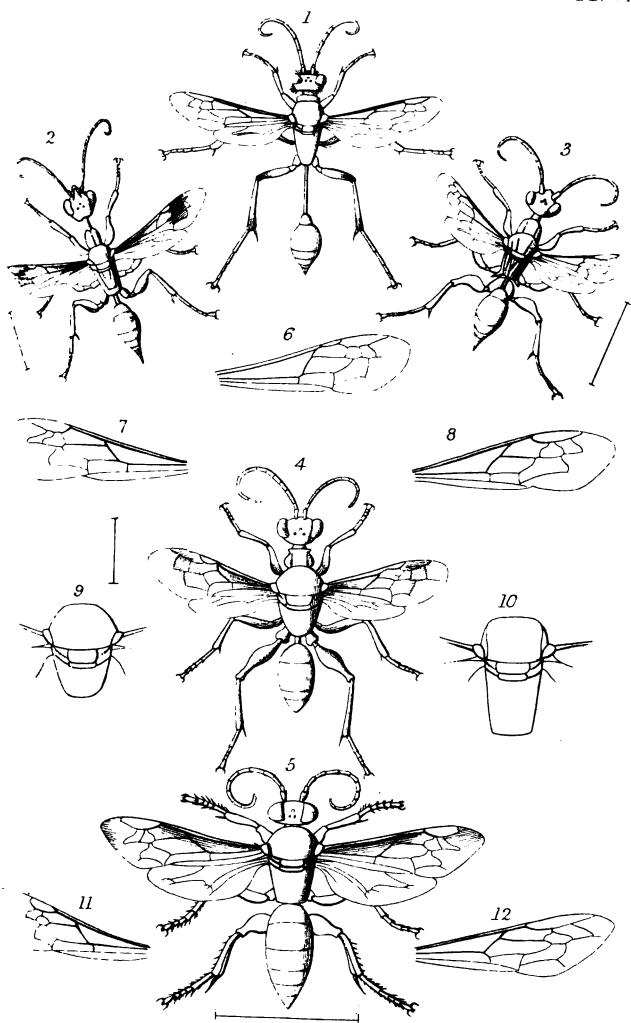
ADDENDA ET CORRIGENDA.

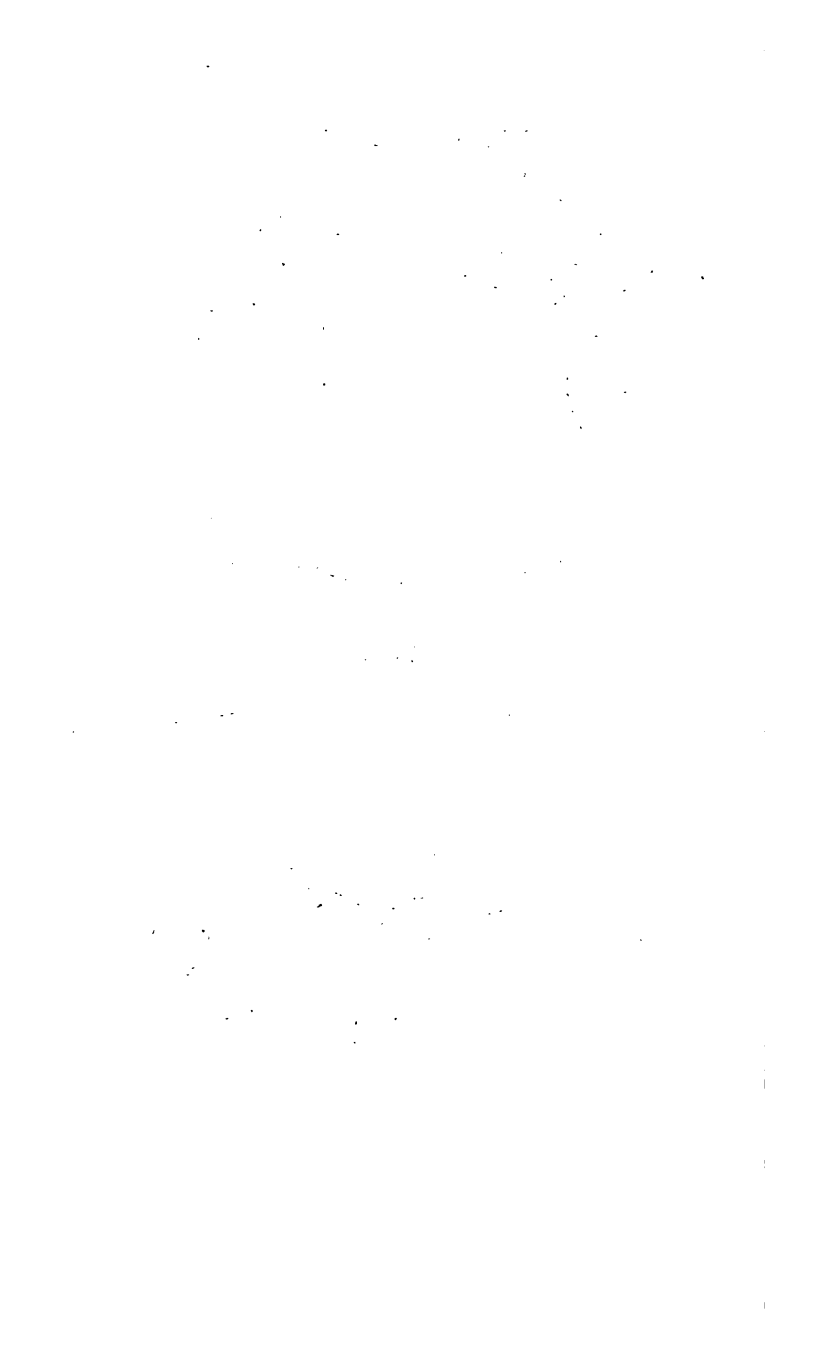
- Page 10. *Mutilla bifasciata*, *Klug*, (nec *Swed.*) change to *M. bizonata*.
- Page 30. After No. 64, add 64* *Mutilla soluta*, *Erchs. Wieg. Arch.* (1842) *Erchs. Ins. Van Diem. Land.* and *Mutilla blanda*, *Erchs. Ins. Van Diem. Land.*
- Page 36. *Mutilla rufiventris* (nec *Klug*) change to *M. ruficeps*.
- Page 116. After line 22, add Fam. I. SAPHYRIDÆ.
- Page 393. *Crabro affinis* (nec *St. Farg.*) change to *Crabro cognatus*.

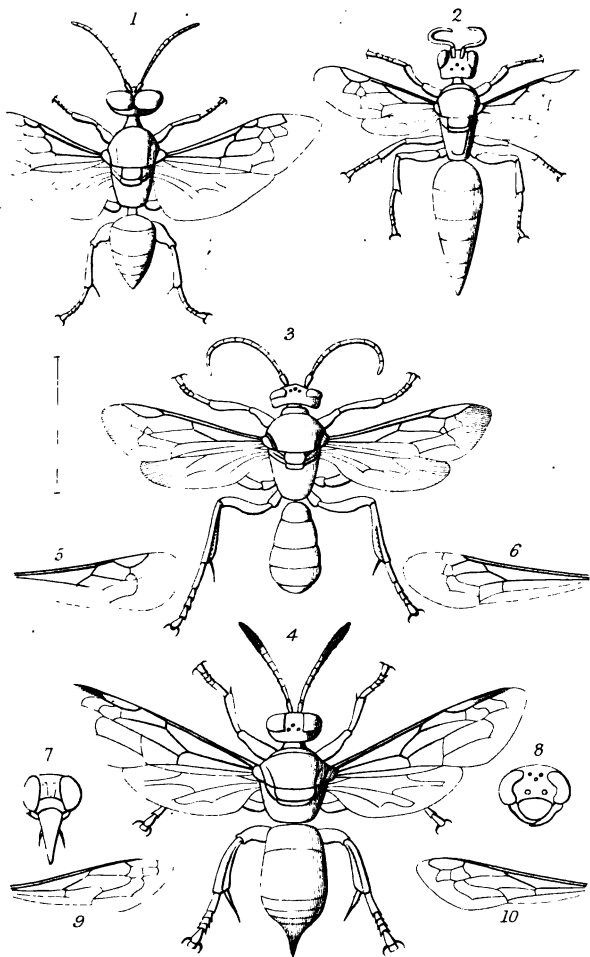


HYMENOPTERA.

PL. VII

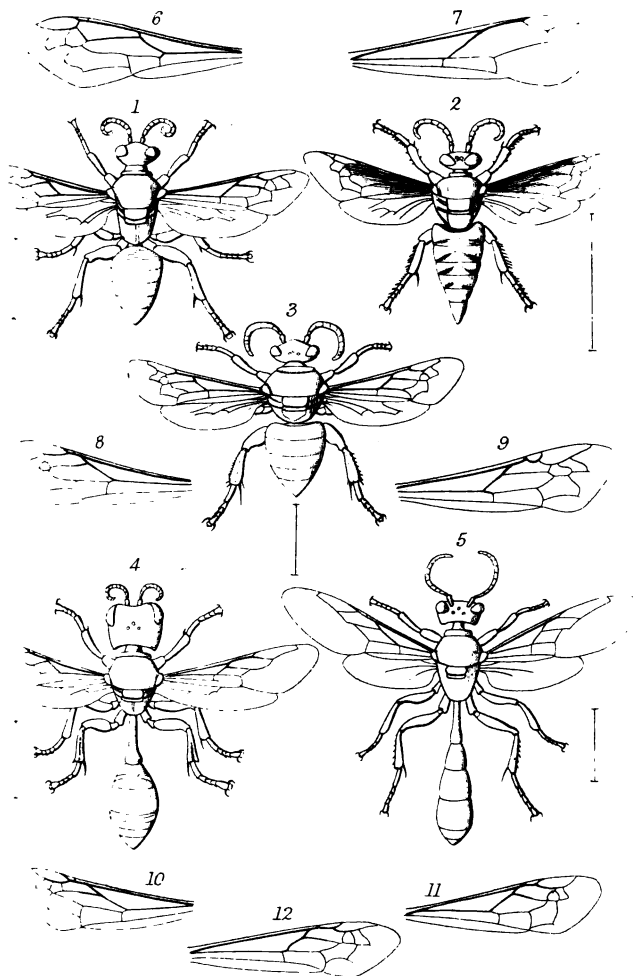


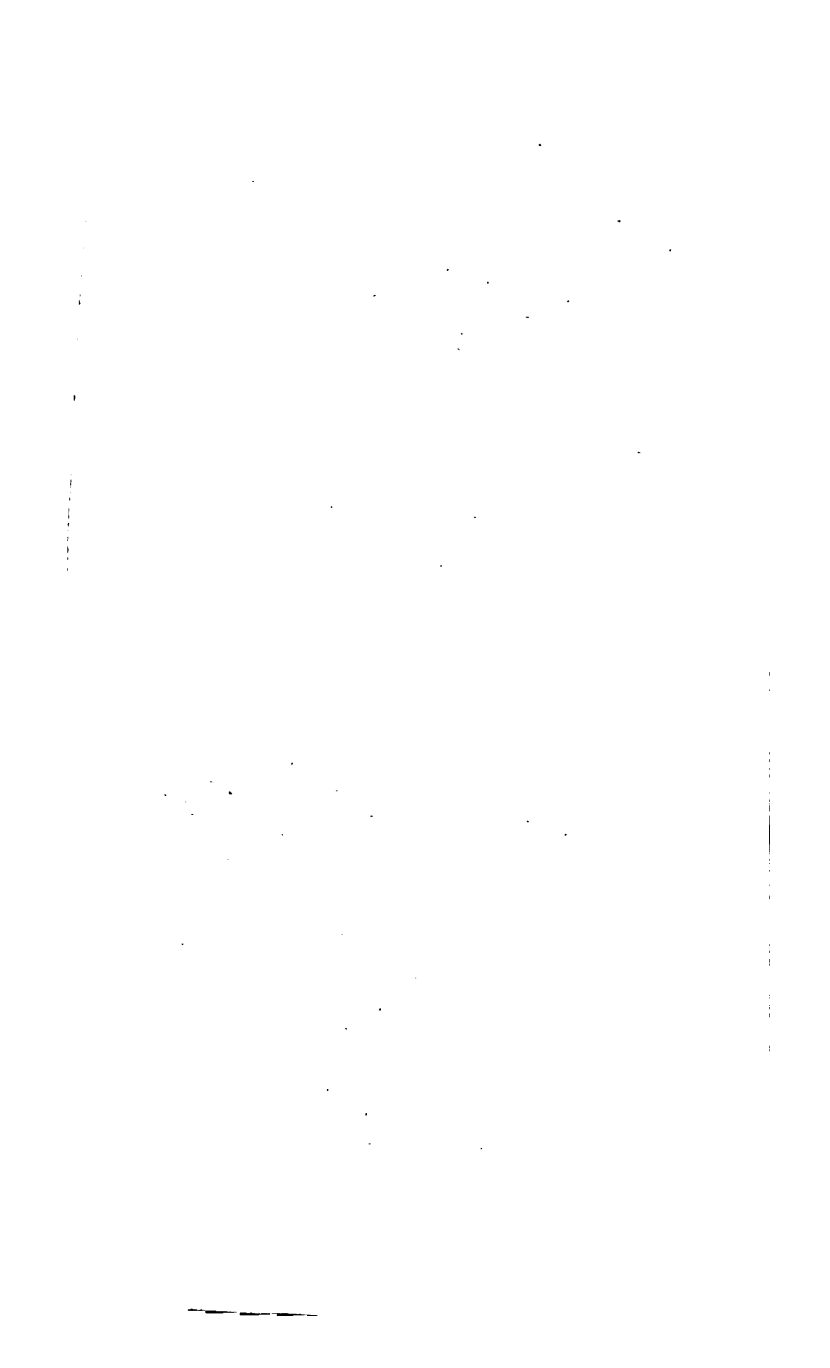




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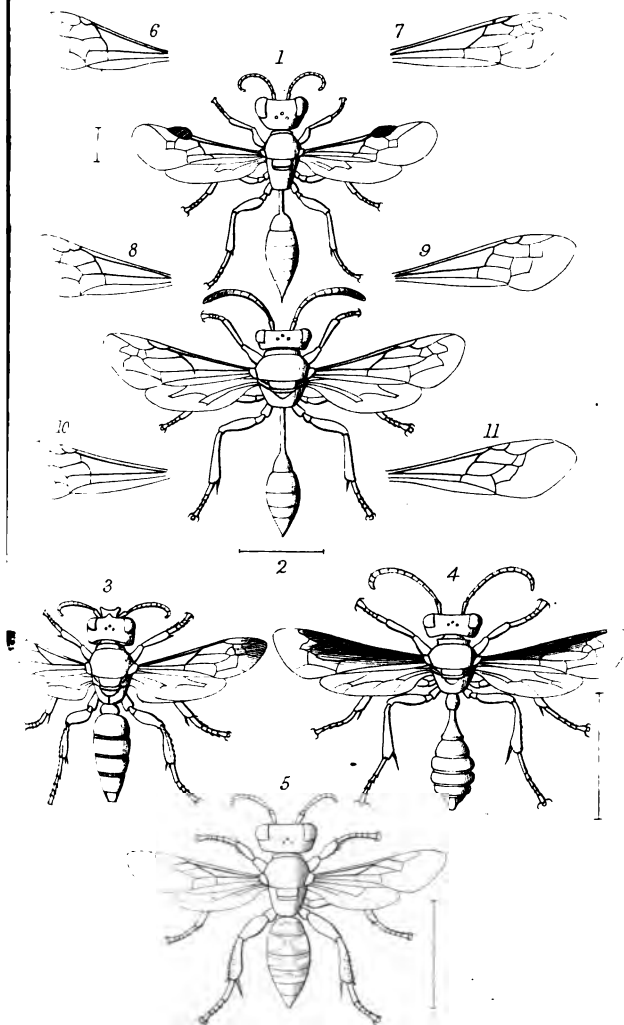






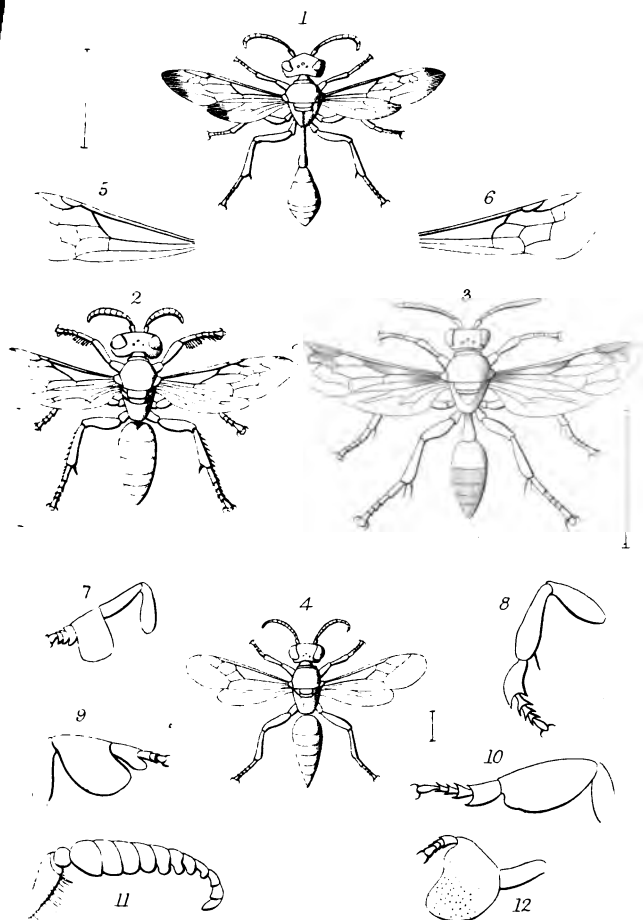
HYMENOPTERA.

PL.



HYMENOPTERA.

PL. XI.



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EXPLANATION OF THE PLATES.

PLATE VI.

Fig.

1. *Trigonopsis hæmorrhoidalis*.
2. *Sphæx ephippium*.
3. *Podium luteipennis*.
4. *Harpactopus crudelis*.
5. Wing of *Ammophila*.

Fig.

6. Wing of *Coloptera*.
7. Wing of *Miscus*.
8. Wing of *Chlorion*.
9. Wing of *Pronæus*.
10. Wing of *Stethorectus*.

PLATE VII.

1. *Pelopæus latus*.
2. *Rhinopsis Abbottii*.
3. *Ampulex chalybeus*.
4. *Aphelotoma Tasmanica*.
5. *Larrada aurulenta*.
6. Wing of *Dolichurus*.

7. Wing of *Tachytes*.
8. Wing of *Trirogma*.
9. Thorax of *Tachytes*.
10. Thorax of *Larrada*.
11. Wing of *Larraxena*.
12. Wing of *Eævirus*.

PLATE VIII.

1. *Astata unicolor*.
2. *Solierella miscophoides*.
3. *Pison regalis*.
4. *Larra Hogardii*.
5. Wing of *Miscophus*.

6. Wing of *Dinetus*.
7. Head of *Bembex*.
8. Head of *Pison*.
9. Wing of *Bembex*.
10. Wing of *Monedula*.

PLATE IX.

Fig.

1. *Sericophorus chalybeus*.
2. *Palarus humeralis*.
3. *Heliorcytes melanopyrus*.
4. *Crabro* (*Dasyproctus*) *fraternus*.
5. *Crabro* (*Podagritus*) *Gayi*.
6. Wing of *Larra*.

Fig.

7. Wing of *Oxybelus*.
8. Wing of *Nysson*.
9. Wing of *Gorytes*.
10. Wing of *Harpactus*.
11. Wing of *Alyson*.
12. Wing of *Mellinus*.

PLATE X.

1. *Stigmus pendulus*.
2. *Psen ater*.
3. *Cerceris orientalis*.
4. *Cerceris* (*Trachypus*) *binodis*.
5. *Crabro cribrarius*.

6. Wing of *Cemonus*.
7. Wing of *Philanthus*.
8. Wing of *Ceratophorus*.
9. Wing of *Pemphredon*.
10. Wing of *Diodontus*.
11. Wing of *Passalæcus*.

PLATE XI.

1. *Philanthus* (*Trachypus*) *apicalis*.
2. *Philanthus diadema*.
3. *Gorytes Natalensis*.
4. *Nitela Spinola*.
5. Wing of *Ceratophorus*.
6. Wing of *Cemonus*.
7. Anterior leg of *Crabro vexillatus* ♂.

8. Anterior leg of *Crabro palmipes* ♂.
9. Anterior leg of *Crabro scutatus* ♂.
10. Anterior leg of *Crabro cetratus* ♂.
11. Antennæ of *Crabro cribrarius* ♂.
12. Anterior tarsus of *Crabro*.

List of the typical specimens of Fossorial Hymenoptera in the Museum at Kiel, described by Fabricius in the *Systema Piezatorum*, referred by Professor Behn to the genera in which they appear in this Catalogue.

<i>Ceropales spinosa</i> , <i>Syst. Piez.</i> p. 186. 5.	<i>Nysson spinosus</i> .
— <i>ruficollis</i> , " " 186. 6.	<i>Harpactus lævis</i> (var.).
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Sphex clavus,	„ „	206. 3.	Ammophila clavus.
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— Pennsylvanica,	„ „	211. 15.	— Pennsylvanica.
— tibialis,	„ „	212. 21.	Pelopæus tibialis.
Chlorion lobatum,	„ „	217. 1.	Chlorion lobatum.
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THE END.



CATALOGUE
OF
HYMENOPTEROUS INSECTS
IN
THE COLLECTION
OF THE
BRITISH MUSEUM.

BY
FREDERICK SMITH, M.E.S.

PART V.
VESPIDÆ.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1857.

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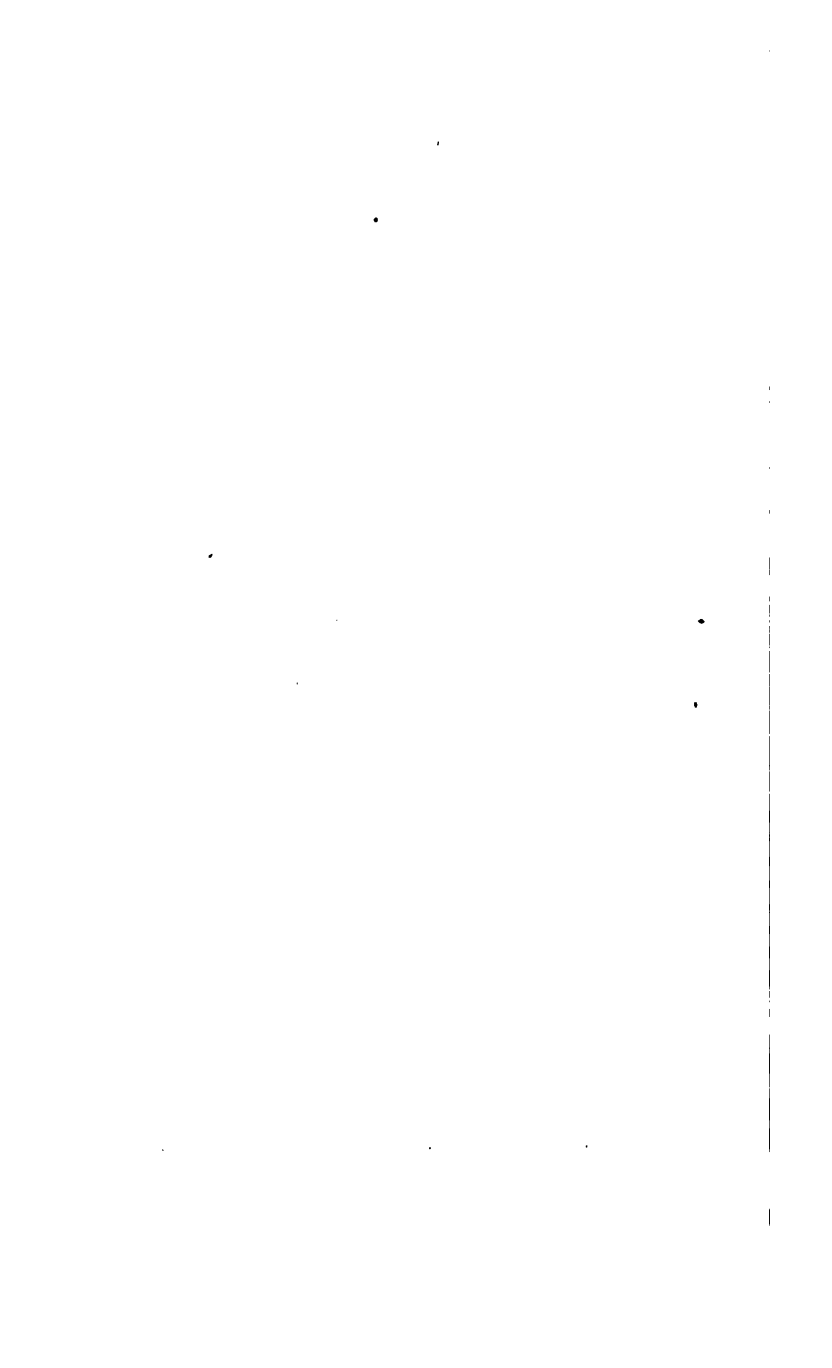
P R E F A C E.

THE object of the present Catalogue is to give a complete list of all the genera and species of the Solitary and Social Wasps (*VESPIDÆ*) which have been described in works, and a description of those in the British Museum which appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species now contained in the Collection of the British Museum, and their absence those which are desiderata.

JOHN EDWARD GRAY.

2nd March, 1857.



CATALOGUE
OF
HYMENOPTERA.

Div. II. ACULEATA.

Tribe 3. DIPLOPTERA.

Group 1. Solitary Wasps.

Fam. 1. MASARIDÆ.

This family contains some very anomalous species of Wasps, many of them differing in various characters from the true *Vespidæ*, but in one important characteristic they correspond with the latter family,—the prothorax is always prolonged backwards to the base of the wings. The anterior pair of wings have only two submarginal cells. The genus *Paragia* differs from the rest in not having the wings folded when in repose, and in some of the species having the eyes ovate, or but very slightly emarginate.

Genus 1. PARAGIA.

Paragia, Shuck. *Trans. Ent. Soc. Lond.* ii. 81.

1. PARAGIA DECIPIENS.

Paragia decipiens, Shuck. *Trans. Ent. Soc. Lond.* ii. 82. 1. t. 8.
f. 3 ♀.

Sauss. *Mon. Fauss. Guêpes*, 54. 1.

Hab. Australia.

2. PARAGIA TRICOLOR.

B.M.

Paragia tricolor, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. i. 41. t. 5. f. 1 ♂ (nec ♀).

Paragia Smithii, *Sauss. Mon. Fauss. Guépes*, 55. 3. t. 2. f. 1 ♀.

Hab. Australia (Adelaide).

3. PARAGIA SAUSSURII.

B.M.

Paragia tricolor, *Sauss. Mon. Fauss. Guépes*, 54. 2 ♀ (nec *Smith*).

Hab. Australia (Perth).

4. PARAGIA ODYNEROIDES.

B.M.

Paragia Odyneroides, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. i. 42. t. 5. f. 2 ♀.

Sauss. Mon. Fauss. Guépes, 56. 4.

Hab. Australia (Hunter River).

5. PARAGIA AUSTRALIS.

Paragia Australis, *Sauss. Ann. Soc. Ent. Fr.* 3rd ser. i. Bull. p. 21; *Mon. Fauss. Guépes*, 57. 5 ♂ ♀. t. 2. f. 2 ♂.

Hab. Tasmania. (Coll. M. Saussure.)

6. PARAGIA BICOLOR.

Paragia bicolor, *Sauss. Ann. Soc. Ent. Fr.* 3rd ser. i. Bull. p. 21 (1853); *Mon. Fauss. Guépes*, 58. 6. t. 2. f. 3 ♂.

Hab. Australia. (Paris Museum.)

7. PARAGIA BIDENS.

B.M.

Paragia bidens, *Sauss. Mon. Fauss. Guépes*, 59. 7 ♂ ♀.

Hab. Adelaide.

The male only in the Collection of the British Museum.

8. PARAGIA PRÆDATOR.

B.M.

Paragia prædator, *Sauss. Mon. Fauss. Guépes*, 59. 8 ♀.

Hab. Australia.

9. PARAGIA PICTIFRONS.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head and thorax closely covered with large confluent punctures; the anterior margin of the clypeus truncated, and having a minute tubercle in the middle; the mandibles obtusely subdentate at their apex; the inner orbit of the eyes notched, the notch orange, and a waved orange band crossing the forehead between the notches; an orange line on the lateral margins of the clypeus; the scape

ferruginous, the flagellum indistinctly so beneath. A narrow orange line on the posterior margin of the prothorax, an oblique line emanating from it and uniting with a large yellow spot beneath the wings; the posterior margin of the scutellum, the sides of the metathorax, the tegulæ, and two minute oblong spots on the mesothorax, near the basal margin of the scutellum, orange; the legs pale ferruginous, dashed with yellow; the wings fusco-hyaline, with a dark cloud occupying the marginal and first sub-marginal cells. The basal segment of the abdomen with a narrow yellow fascia on its posterior margin; the third segment yellow, with a semicircular transverse black spot at the base; the fourth segment yellow, with a transverse black stripe at the base, broadly emarginate on its posterior margin and not extending to the lateral margins of the segment; the fifth segment yellow, with a black spot on each side at the base; the sixth yellow; the abdomen pale ferruginous beneath, with an indistinct yellow transverse band on the third and fourth segments.

Hab. Australia (Swan River).

Genus 2. CERAMIUS.

Ceramius, Latr. *Consid. gén.* (1810).

Gnatho, Klug, *Mag. Nat. Freunde* (nec Illig. *Coleopt.*) (1810).

1. CERAMIUS FONSCOLOMBII.

B.M.

Ceramius Fonscolombii, Klug, *Ent. Monogr.* 229. 3 ♂.

Boyer de Fonsc. Ann. Soc. Ent. Fr. 1st ser. iv. 421. t. 10. f. A ♂.

St. Farg. Hym. ii. 590. 1.

Sauss. Mon. Fauss. Guépes, 62. 1 ♂ ♀.

Hab. South of Europe.

2. CERAMIUS ORANIENSIS.

Ceramius Oraniensis, *St. Farg. Hym.* ii. 591. 2 ♂ ♀.

Lucas, Explo. Sc. Algér. iii. 225.

Sauss. Mon. Fauss. Guépes, 65. 2.

Hab. Algeria.

3. CERAMIUS CAPENSIS.

Ceramius Capensis, *Sauss. Mon. Fauss. Guépes*, div. 2. 66. 3. t. 3. f. 3 ♀.

Hab. Cape of Good Hope. (Coll. M. Guérin-Ménéville.)

4. CERAMIUS SPIRICORNIS.

Ceramius (*Paraceramius*) *spiricornis*, *Sauss. Mon. Fauss. Guépes*, div. 2. 67. 4. t. 3. f. 5 ♂.

Hab. Central Europe; Spain. (Paris Museum.)

5. CERAMIUS LUSITANICUS.

Ceramius (*Paraceramius*) *lusitanicus*, *Klug, Entom. Monogr.* 230 ♂.

Sauss. Mon. Fauss. Guêpes, 69. 5. div. 2. t. 3. f. 6 ♂.

Hab. Middle of France; Spain. (Coll. Dr. Sichel.)

6. CERAMIUS NIGRIPENNIS.

Ceramius (*Paraceramius*) *nigripennis*, *Sauss. Mon. Fauss. Guêpes*, div. 2. 69. 6. t. 3. f. 4 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

7. CERAMIUS LINEARIS.

Ceramius (*Paraceramius*) *linearis*, *Klug, Entom. Monogr.* 227. 2 *Sauss. Mon. Fauss. Guêpes*, div. 2. 71. 7 ♂.

Hab. Cape of Good Hope.

8. CERAMIUS CERCERIFORMIS.

Ceramius (*Ceramoides*) *cerceriformis*, *Sauss. Mon. Fauss. Guêpes*, div. 3. 72. 8. t. 4. f. 1 ♂.

Hab. Cape of Good Hope. (Coll. M. Guérin-Méneville.)

9. CERAMIUS LICHTENSTEINII.

B.M.

Gnatho Lichtensteinii, *Klug, Mag. Gesellsch. Naturf. Freund.* iv. 38. t. 1. f. 3 ♀.

Ceramius Lichtensteinii, *Klug, Entom. Monogr.* 225. 1.

Sauss. Mon. Fauss. Guêpes, div. 4. 73. 9.

Hab. Cape of Good Hope.

10. CERAMIUS REX.

Ceramius Rex, *Sauss. Mon. Fauss. Guêpes*, div. 4. 75. 10 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

11. CERAMIUS CAFFER.

Ceramius Caffer, *Sauss. Mon. Fauss. Guêpes*, div. 4. 76. 11.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

12. CERAMIUS MACROCEPHALUS.

Ceramius macrocephalus, *Sauss. Mon. Fauss. Guêpes*, div. 4. 76. 12. t. 3. f. 2 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

13. CERAMIUS CONSOBRINUS.

Ceramius consobrinus, *Sauss. Mon. Fauss. Guêpes*, div. 4. 77. 13 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

14. CERAMIUS VESPIFORMIS.

Ceramius vespiiformis, *Sauss. Mon. Fauss. Guêpes*, div. 4. 79. 14 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

Genus 3. MASARIS.

Masaris, *Fabr. Ent. Syst.* ii. 283 (1793).

1. MASARIS VESPIFORMIS.

Masaris Vespiformis, *Fabr. Ent. Syst.* ii. 283. 1; *Syst. Piez.* 292. 1.

Coqueb. Illustr. Icon. t. 15. f. 4 ♂.

Latr. Ins. iii. 368; *Hist. Crust. et Ins.* xiii. t. 102. f. 8;

Encycl. Méth. t. 383. f. 7, 8; *Gen. Crust. et Ins.* iv. 144.

St. Farg. Hym. ii. 589. 1.

Schaum, Ann. Soc. Ent. Fr. 3rd ser. i. 653. t. 20. f. 1 ♂ ♀.

Sauss. Mon. Fauss. Guêpes, 92. 1.

Erynnis Romandii, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. Bull. xix. ♀.

Hab. Barbary.

2. MASARIS SPINOLÆ.

Masaris Spinolæ, *Sauss. Mon. Fauss. Guêpes*, 95. 2 ♀.

Hab. Cape of Good Hope.

Genus 4. TRIMERIA.

Erynnis, *Sauss. Ann. Soc. Ent. Fr.* 3 ser. i. Bull. p. 22.

Trimeria, *Sauss. Mon. Fauss. Guêpes*, 81.

1. TRIMERIA AMERICANA.

Erynnis Americana, *Sauss. Ann. Soc. Ent. Fr.* 3 ser. i. Bull. p. 22.

Trimeria Americana, *Sauss. Mon. Fauss. Guêpes*, 81. 1. t. 4. f. 2, 2 a, 2 b ♀.

Hab. Brazil.

Genus 5. JUGURTIA.

Celonites, *St. Farg. Hym.* ii. 586 (1841).

Jugurtia, *Sauss. Mon. Fauss. Guépes*, 83. (1854).

1. JUGURTIA ORANIENSIS.

Celonites Oraniensis, *St. Farg. Hym.* ii. 586. 2 ♂.

Lucas, Explo. Sc. Algér. iii. 227. t. 10. f. 12.

Dufour, Ann. Soc. Ent. Fr. 2nd ser. ix. 58. t. 3. f. 1 ♀ ♂.

Jugurtia Oraniensis, *Sauss. Mon. Fauss. Guépes*, 84. 1 ♂ ♀.

Hab. Algeria (Oran).

2. JUGURTIA NUMIDA.

Jugurtia Numida, *Sauss. Mon. Fauss. Guépes*, 85. 2. t. 5. f. 3 ♂

Hab. Algeria. (Paris Museum.)

Genus 6. CELONITES.

Vespa, *pt., Villers, Entom.* iii. 281 (1789).

Chrysis, *pt., Rossi, Faun. Etrus.* ii. 77 (1790).

Cimbex, *pt., Oliv. Encycl. Méth.* v. 772 (1790).

Celonites, *Latr. Hist. Nat. Ins.* xiii. (1804).

Masaris, *Jurine, Hym.* (1807).

1. CELONITES ABBREVIATUS.

B.M.

Vespa abbreviatus, *Villers, Entom.* iii. 281. 38.

Chrysis dubia, *Rossi, Faun. Etrus.* ii. 77. t. 7. f. 10, 11.

Cimbex vespiformis, *Oliv. Encycl. Méth.* v. 772. 16.

Masaris apiformis, *Panz. Faun. Germ.* 79. 19.

Jurine, Hym. t. 10. f. 17.

Celonites apiformis, *Spin. Ins. Ligur.* i. 90.

Latr. Hist. Crust. et Ins. xiii. 354; *Gen. Crust. et Ins.* iv. 144.

Guér. Icon. Règ. Anim. t. 72. f. 1.

St. Farg. Hym. ii. 587. 3.

Celonites abbreviatus, *Sauss. Mon. Fauss. Guépes*, 88. 1.

Hab. France; Germany; Switzerland; Italy; Algeria.

2. CELONITES FISCHERI.

Celonites Fischeri, *Spin. Ann. Soc. Ent. Fr.* vii. 505 (1838).

St. Farg. Hym. ii. 585. 1.

Lucas, Explo. Sc. Algér. iii. 226. t. 10. f. 11.

Sauss. Mon. Fauss. Guépes, 89. 2.

Hab. Egypt; Algeria.

3. CELONITES SAVIGNYI.

Celonites Savignyi, *Sauss. Mon. Fauss. Guêpes*, 91. 3.

This species is figured in the "Description of Egypt," by Savigny, Hymenoptera, plate 9. fig. 19. ♂ & ♀. The details are those of a species distinct from the two former. See Saussure's Monograph.

Hab. Egypt.

4. CELONITES CYPRIUS.

Celonites Cyprius, *Sauss. Mém. Soc. Phys. Genève*, xiv. 4. 1.

Hab. Cyprus.

Fam. 2. EUMENIDÆ, *Westw.*

The anterior wings folded longitudinally, having three sub-marginal cells and two recurrent nervures; the eyes reniform, lateral, and extending to the base of the mandibles; the anterior and intermediate tibiae armed with one spine at their apex, the posterior tibiae with two spines; the claws of the tarsi bifid.

Genus 1. RAPHIGLOSSA.

Raphiglossa, *Saunders, Trans. Ent. Soc. Lond.* n. s. i. 72 (1851).

1. RAPHIGLOSSA EUMENOIDES.

B.M.

Raphiglossa Eumenoides, *Saund. Trans. Ent. Soc. Lond.* n. s.

i. 72. t. 6. f. 4 ♂ ♀.

Sauss. Mon. Guêpes Sol. 2. 1.

Hab. Albania.

2. RAPHIGLOSSA ZETHOIDES.

Raphiglossa Zethoides, *Sauss. Mon. Guêpes Sol.* 3. 2 ♂.

Hab. Algeria.

3. RAPHIGLOSSA FILIFORMIS.

Raphiglossa filiformis, *Sauss. Mon. Guêpes Sol.* 3. 3. t. 8. f. 1
(male only).

Hab. Algeria?

4. *RAPHIGLOSSA SYMMORPHA*.

Raphiglossa symmorpha, *Sauss. Mon. Guêpes Sol. Supp.* 114 ♀.

Hab. Algeria.

5. *RAPHIGLOSSA NATALENSIS*.

B.M.

Female. Length $6\frac{1}{4}$ lines.—Black: the head and thorax strongly and closely punctured; the head subquadrate, very convex; the clypens widely emarginate in front, with a small tubercle in the middle; the mandibles very stout, quadridentate and slightly ferruginous near their apex; the scape and basal half of the flagellum ferruginous. The thorax transverse in front, with the lateral angles produced and acute, the margin of a reddish-yellow as well as the posterior margin of the prothorax; the tubercles, tegulae, extreme apex of the metathorax at the insertion of the petiole of the abdomen, and the legs, ferruginous; the coxae black; the wings subhyaline, the anterior pair with a fuscous stain along their anterior margin. Abdomen: the petiole elongate, with a minute tubercle on each side about the middle; the apex yellow; the second segment with a narrow pale yellow band on its apical margin which is continued beneath the abdomen; above, the band is slightly emarginate on each side—beneath, it is notched on each side and widened in the middle; a pale spot in the middle of the apical margins of the third and fourth segments above.

Hab. Port Natal.

Genus 2. *STENOGLLOSSA*.

Raphiglossa, *Saund. Trans. Ent. Soc. Lond.* n. s. i. 72 (1851).

Stenoglossa, *Sauss. Mon. Guêpes Sol.* 4 (1852).

1. *STENOGLLOSSA ODYNEROIDES*.

B.M.

Raphiglossa odyneroides, *Saund. Trans. Ent. Soc. Lond.* n. s. i. 72. t. 6. f. 2, 3.

Stenoglossa odyneroides, *Sauss. Mon. Guêpes Sol.* 5. 1. t. 2. f. 2.

Hab. Albania.

Genus 3. *GAYELLA*.

Gayella, *Spin. Faun. Chili*, vi. (1854).

1. *GAYELLA EUMENOIDES*.

Gayella Eumenoides, *Spin. Faun. Chili*, vi. t. 2. f. 2.

Sauss. Mon. Guêpes Sol. 6. 1. t. 8. f. 4 ♀.

Hab. Chili.

2. GAYELLA MUTILLOIDES.

B.M.

Gayella Mutilloides, *Sauss. Mon. Guêpes Sol. Supp.* 114. 1 ♀.*Hab.* Chili.

Genus 4. ELIMUS.

Elimus, *Sauss. Mon. Guêpes Sol.* 7 (1852).

1. ELIMUS AUSTRALIS.

Elimus Australis, *Sauss. Mon. Guêpes Sol.* 8. 1. t. 8. f. 3 ♂.*Hab.* Australia. (Coll. J. O. Westwood, Esq.)

Genus 5. SMITHIA.

Smithia, *Sauss. Rev. et Mag. de Zool.* 371 (1855).

1. SMITHIA NATALENSIS.

B.M.

Smithia Natalensis, *Sauss. Rev. et Mag. de Zool.* 371 (1855).*Hab.* Port Natal.

Genus 6. ZETHUS.

Vespa, pt., *Fabr. Ent. Syst. Supp.* 263. 86 (1798).*Zethus*, *Fabr. Syst. Piez.* 282. 51 (1804).*Enmenes*, pt., *Latr. Hist. Nat.* xii.*Polistes*, pt., *Fabr. Syst. Piez.* 269 (1804).*Didymogastra*, *Spin. Mem. Accad. Torino*, xiii. 80 (1850).*Epipona*, pt., *Spin. Faun. Chili*, vi. (1854).*Calligaster*, *Sauss. Mon. Guêpes Sol.* 23. 2 (1852).DIV. I.—*Species of Java.*

1. ZETHUS CYANOPTERUS.

Calligaster cyanoptera, *Sauss. Mon. Guêpes Sol.* 23. 2 ♀.*Zethus cyanopterus*, *Sauss. Supp. Mon. Guêpes Sol.* 115.*Hab.* Java.DIV. II.—*Species of Africa.*

2. ZETHUS? PUBESCENS.

B.M.

Female. Length 6–6½ lines.—Black, and covered with a thin short cinereous pubescence; the mandibles, scape, and apical joint of the antennæ beneath, ferruginous; the head and thorax closely and strongly punctured; the tegulæ and legs ferruginous, the posterior tibiæ and tarsi obscurely so; the wings iridescent,

subhyaline, and with a fuscous stain along the anterior margin of the superior pair. The petiole of the abdomen elongate and cylindrical, the apex of the abdomen ferruginous.

Hab. Port Natal.

This insect may, when more specimens can be obtained, and the parts of the mouth examined, prove not to belong to the genus *Zethus*, and it is placed there with a doubt; it is represented by a single example in the Collection.

Div. III.—*Species of South America.*

3. *ZETHUS BRASILIENSIS.*

Zethus Brasiliensis, *Sauss. Mon. Guêpes Sol.* 10. 2 ♀.

Hab. Brazil.

4. *ZETHUS CHALYBEUS.*

Zethus chalybeus, *Sauss. Mon. Guêpes Sol.* 10. 3 ♀.

Hab. Brazil.

5. *ZETHUS CARBONARIUS.*

B.M.

Female. Length 17 lines.—Shining jet-black, except the flagellum, which is fulvous beneath, obscurely so at the base; the clypeus finely striated longitudinally, and covered with distant shallow punctures; above the clypeus the head is finely punctured. The thorax finely punctured, the metathorax with a fine short silky cinereous pubescence; the posterior legs within and the tarsi have a similar pubescence; the wings brown, darkest along the anterior margin of the superior pair. The dilatation of the petiole of the abdomen nearly ovate, and as well as the second segment, impunctate; the apical edge of the membrane of the second segment yellow; the following segments with shallow punctures; the abdomen punctured beneath, except the petiole and the base of the second segment.

Hab. Brazil (the Amazons). (Coll. H. W. Bates.)

6. *ZETHUS MAGNUS.*

Zethus magnus, *Sauss. Mon. Guêpes Sol.* 11. 4. t. 8. f. 5 ♂.

Hab. Brazil.

7. *ZETHUS LUGUBRIS.*

B.M.

Zethus lugubris, *Perty, Del. Anim. Art.* 144. t. 28. f. 4.

Sauss. Mon. Guêpes Sol. 11. 5 ♂ ♀.

Hab. Brazil.

8. *ZETHUS MEXICANUS*.

Vespa Mexicana, Linn. *Syst. Nat.* i. 953. 6.

Tigny, *Hist. Ins.* iii. 579.

Vespa recurvirostris, *De Geer*, *Mém. Ins.* iii. 579. t. 29. f. 4-6.

Zethus cyanipennis, *Fabr. Ent. Syst.* ii. 277. 86.

Polistes cyanipennis, *Fabr. Syst. Piez.* 275. 30.

Coqueb. Illustr. Icon. Ins. dec. i. t. 6. f. 4.

Vespa mexicana, *Oliv. Encycl.* vi. 673.

Eumenes cyanipennis, *Latr. Hist. Nat. Ins.* xii. 345.

Zethus cyanipennis, *Latr. Hist. Crust. et Ins.* iv. 138.

Erichs. Faun. et Flo. Brit. Guiana, iii. 590.

Sauss. Mon. Guêpes Sol. 12. 6.

Hab. South America; Cayenne.

9. *ZETHUS FERRUGINEUS*.

B.M.

Zethus ferrugineus, *Sauss. Mon. Guêpes Sol.* 14. 10 ♀.

Hab. South America; Brazil (Para).

10. *ZETHUS PALLIDUS*.

Female. Length $6\frac{1}{2}$ lines.—Pale testaceous yellow: the head, mesothorax above, the apical margin of the scutellum, and a longitudinal stripe on the petiole of the abdomen, black; the antennæ, mandibles, clypeus, and a transverse line above it, testaceous-yellow. The head and thorax with a thin golden-yellow pubescence, that on the metathorax and abdomen is more dense and longer, coarsely punctured; the wings subhyaline, the superior pair with a yellow stain on their anterior margin; beyond the stigma the margin is slightly fuscous; the mesothorax with two longitudinal yellow stripes; the central suture of the metathorax black. Abdomen: the apical margin of the second segment with a deep groove a little within, the margin itself much elevated.

Hab. Brazil. (Coll. F. Smith.)

11. *ZETHUS SCULPTURALIS*.

Male. Length 6-7 lines.—Black: the clypeus with large distant shallow punctures; the head above the antennæ coarsely longitudinally rugose; the anterior margin of the clypeus and a small ovate spot at the insertion of the antennæ yellow. Thorax: the prothorax transversely and coarsely rugose before the tegulæ, the mesothorax and scutellum longitudinally so; the metathorax, sides of the thorax, and the clypeus covered with cinereous pubescence; the prothorax with a deep transverse channel in

front, the anterior margin elevated; a spot on the tegalæ behind, and the posterior margin of the scutellum, yellow; the wings fusco-hyaline; the anterior femora yellow at their apex outside, and the tibiæ also with a yellow stripe outside; the claw-joint of the tarsi rufo-testaceous. Abdomen: the apex of the petiole, and the second and third segments with a narrow yellow fascia; the margins of the following segments testaceous; the second segment of an obscure reddish-brown.

Hab. Brazil (Ega on the Amazons). (Coll. H. W. Bates.)

This species is closely allied to *Zethus cinerascens* of Saussure; the sex described is not indicated.

12. *ZETHUS FRATERNUS*.

B.M.

Zethus fraternus, *Sauss. Mon. Guêpes Sol.* 16. 14 ♂.

Hab. Brazil.

13. *ZETHUS LOBULATUS*.

B.M.

Zethus lobulatus, *Sauss. Mon. Guêpes Sol. Supp.* 116. 2. t. 6. f. 4, 4 a ♀.

Hab. Brazil (Amazons).

14. *ZETHUS CINERASCENS*.

Zethus cinerascens, *Sauss. Mon. Guêpes Sol. Supp.* 117. 3.

Hab. Brazil.

15. *ZETHUS PARVULUS*.

Zethus parvulus, *Sauss. Mon. Guêpes Sol. Supp.* 119. 5. t. 6. f. 1 ♀.

Hab. Brazil.

16. *ZETHUS GENICULATUS*.

Didymogastra geniculata, *Spin. Mem. Accad. di Torino*, ser. 2. xiii. 80. 61.

Zethus geniculatus, *Sauss. Mon. Guêpes Sol. Supp.* 120. 6 ♂ ♀.

Hab. Para.

17. *ZETHUS HILARINUS*.

Zethus hilarinus, *Sauss. Mon. Guêpes Sol. Supp.* 120. 7. t. 6. f. 6 ♀.

Hab. Brazil.

18. *ZETHUS AURULENS*.

Zethus aurulens, *Sauss. Mon. Guêpes Sol. Supp.* 121.8.t. 6. f. 5 ♂.

Hab. Brazil.

19. *ZETHUS DUBIUS*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head, thorax and petiole closely and strongly punctured; a minute spot above the insertion of each antenna, and a similar spot behind the eyes, yellow; the anterior margin of the clypeus slightly emarginate in the middle. A line on the anterior margin of the prothorax laterally, a minute spot behind the tegulæ, one on each side of the scutellum, a transverse line on the post-scutellum, from the lateral angles of which a line runs down the metathorax to the insertion of the abdomen, yellow. A minute spot at the apex of the femora behind, another at the base of the tibiæ outside, the intermediate femora with a stripe beneath, and a narrow line on the tibiæ outside, yellow; the wings subhyaline, the anterior margin of the superior pair fuscous. The dilated portion of the petiole of the abdomen elongate-ovate, the apex with a yellow band; the apical margin of the following segments with narrow yellow bands.

The male differs in having the clypeus yellow and in having the anterior margin of the prothorax entirely yellow; otherwise resembling the female.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

20. *ZETHUS CARINATUS*.

B.M.

Male. Length 4 lines.—Black: the head, thorax, and petiole of the abdomen coarsely punctured, a longitudinal carina extending the entire length of the dilated portion, which is elongate and cylindrical. The clypeus, a minute spot in the emargination of the eyes, another above the insertion of each antenna, the scape in front, and a stripe on the mandibles, yellow; the anterior margin of the clypeus truncate in the middle. The anterior margin of the prothorax, a minute spot on each side of the scutellum and post-scutellum, and two longitudinal lines on the metathorax, running down to the insertion of the abdomen, yellow; the anterior and intermediate tibiæ outside, and the intermediate femora at their apex in front, yellow; the anterior tarsi rufous; the wings subhyaline, the superior pair faintly clouded at their anterior margin. The apex of the petiole of the abdomen, and the apical margins of the segments with narrow yellow bands.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

21. ZETHUS FUSCUS.

Didymogastra fusca, *Perty, Del. Anim. Art.* p. 145. t. 28. f. 5 ♀.
Zethus fuscus, *Sauss. Mon. Guêpes Sol.* 19. 21.

Hab. Brazil (Amazons).

22. ZETHUS SMITHII.

Zethus Smithii, *Sauss. Mon. Guêpes Sol. Supp.* 122. 9 ♀.

Hab. — ? South America or Java. (Coll. F. Smith.)

23. ZETHUS CÆRULEOPENNIS.

Vespa cæruleopennis, *Fabr. Ent. Syst. Supp.* 263. 86-7.

Zethus cæruleopennis, *Fabr. Syst. Piez.* 282. 1.

Latr. Gen. Crust. et Ins. iv. 137. 138. t. 14. f. 4; *Encycl.*
 t. 393. f. 12 & 13.

Coqueb. Illustr. Icon. Ins. dec. i. t. 6. f. 4.

Sauss. Mon. Guêpes Sol. 9. 1 ♂ ♀.

Hab. Cayenne; Para.

24. ZETHUS GIGAS.

B.M.

Zethus gigas, *Spin. Ann. Soc. Ent. Fr.* x. 129. 1 ♀ (1841).

Sauss. Mon. Guêpes Sol. 12. 7 ♂ ♀.

Calligaster Hero, *de Haan, MSS.*

Sauss. Mon. Guêpes Sol. 23. 1.

Hab. Cayenne.

25. ZETHUS BIGLUMIS.

Zethus biglumis, *Spin. Ann. Soc. Ent. Fr.* x. 135 ♀ (1841).

Sauss. Mon. Guêpes Sol. 19. 20.

Hab. Cayenne.

26. ZETHUS PYRIFORMIS.

Zethus pyriformis, *Spin. Ann. Soc. Ent. Fr.* x. 135. 1.

Sauss. Mon. Guêpes Sol. 15. 12. t. 8. f. 8 ♀.

Hab. Cayenne.

27. ZETHUS ROMANDINUS.

Zethus Romandinus, *Sauss. Mon. Guêpes Sol.* 20. 22. t. 9. f. 1 ♂.

Hab. Cayenne.

28. ZETHUS BINODIS.

B.M.

Vespa binodis, *Fabr. Ent. Syst. Supp.* 264. 100-1 ♀.

Coqueb. Illustr. Icon. Ins. dec. ii. t. 15. f. 2.

Eumenes binodis, *Fabr. Syst. Piez.* 287. 8.

Zethus didymogaster, *Spin. Ann. Soc. Ent. Fr.* x. 133 (1841).

Zethus binodis, *Sauss. Mon. Guêpes Sol.* 20. 23.

Hab. Cayenne.

29. ZETHUS NIGER.

B.M.

Zethus niger, *Sauss. Mon. Guêpes Sol.* 21. 24. t. 8. f. 9 ♂.

Hab. Cayenne.

30. ZETHUS ARIETIS.

Vespa arietis, *Fabr. Ent. Syst.* ii. 282. 101 ♂.

Polistes arietis, *Fabr. Syst. Piez.* 280. 50.

Vespa arietis, *Oliv. Encycl. Méth.* vi. 676.

Zethus arietis, *Sauss. Mon. Guêpes Sol.* 14. 11.

Hab. South America.

31. ZETHUS JURINEI.

B.M.

Zethus Jurinei, *Sauss. Mon. Guêpes Sol.* 15. 13 ♂.

Hab. South America ; St. Domingo.

32. ZETHUS ALBOPICTUS.

B.M.

Female. Length $4\frac{1}{4}$ lines.—Black : the head subopaque and finely rugose ; the scape shining ; the flagellum opaque and slightly ferruginous at its apex beneath ; an oblong yellow spot on the lateral margins of the clypeus. The mesothorax slightly shining and covered with fine shallow punctures ; the sides of the thorax and also beneath covered with a fine, short, silky, white pubescence ; the anterior margin of the thorax, a spot beneath the wings, two spots on the tegulæ, an interrupted line on the posterior margin of the scutellum, a minute one on each side of the post-scutellum, and a line on the tibiæ outside, white ; the wings fusco-hyaline, with a dark cloud on the anterior margin of the superior pair. Abdomen : the posterior margin of the petiole, a narrow band towards the base of the first segment, another on its apical margin, and a similar band on the apical margin of the third segment, white ; the white band continued beneath on the apical margin of the first segment.

Hab. St. Domingo.

33. ZETHUS DISCOELIOIDES.

Zethus discoelioides, *Sauss. Mon. Guêpes Sol.* 17. 17 ♀.

Hab. South America; Brazil (Para).

34. ZETHUS MISCOGASTER.

Zethus miscogaster, *Sauss. Mon. Guêpes Sol.* 18. 18 ♀.

Hab. —? (Museum of Geneva.)

35. ZETHUS DICOMBODA.

Epipona dicomboda, *Spin. Faun. Chili*, vi. 250.

Zethus dicomboda, *Sauss. Mon. Guêpes Sol.* 21. 25 ♂ ♀.

Hab. Chili.

DIV. IV.—*Species of North America and Mexico.*

36. ZETHUS SPINIPES.

Zethus spinipes, *Say, North Amer. Hym.* 387.

Sauss. Mon. Guêpes Sol. Supp. 122. 10.

Hab. United States (Indiana).

37. ZETHUS BICOLOR.

B.M.

Zethus bicolor, *Sauss. Mon. Guêpes Sol.* 17. 16 ♂.

Hab. Florida.

38. ZETHUS RUFINODUS.

Eumenes rufinoda, *Latr. Gen. Crust. et Ins.* iv. 137. t. 14. f. 5.

Sauss. Mon. Guêpes Sol. 42. 19. t. 6. f. 3 ♀.

Hab. North America.

39. ZETHUS TUBULIFER.

Zethus tubulifer, *Sauss. Mon. Guêpes Sol.* 18. 19 ♀.

Hab. Mexico (Orizava).

40. ZETHUS WESTWOODI.

Zethus Westwoodi, *Sauss. Mon. Guêpes Sol.* 16. 15. t. 6. f. 2 ♂.

Hab. Mexico.

41. ZETHUS CHRYSOPTERUS.

Zethus chrysopterus, *Sauss. Mon. Guêpes Sol.* 13. 8. t. 8. f. 7 ♂.

Hab. Mexico.

42. *ZETHUS VARIEGATUS*.

Zethus variegatus, *Sauss. Mon. Guêpes Sol.* 13. 9 ♀.

Hab. Mexico.

43. *ZETHUS GRACILIS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: the head and thorax coarsely punctured; between the antennæ a transverse ridge, from the middle of which a carina runs downwards, terminating about the middle of the clypeus; a line on the scape in front, and an obscure spot at each extremity of the ridge between the antennæ, yellow. The metathorax with a deep central longitudinal impression, the sides of which are obliquely striated; the wings hyaline and iridescent, a fuscous stain along the anterior margin of the externo-medial cell, and the apical half of the marginal cell clouded. Abdomen covered with a beautiful reflective silky pile; the apical margin of the petiole and also of the following segment with a narrow yellow fascia; the swollen portion of the petiole with large scattered punctures.

Hab. Mexico.

44. *ZETHUS LÆVINODUS*.

B.M.

Female. Length 9 lines.—Black: the head strongly punctured, the punctures on the vertex scattered; the clypeus longitudinally rugose-striate, the striations irregular, the anterior margin rounded, slightly notched in the middle; the mandibles with deep coarse longitudinal grooves. Thorax: shining, with a few fine distant punctures above; the anterior margin of the prothorax sharply elevated, the lateral angles acute; the mesothorax with an abbreviated carina in the middle in front, and on each side with a deeply impressed longitudinal line extending from its anterior margin to the scutellum, the lines towards the scutellum parallel, but diverging towards the anterior margin; a short impressed line over the tegulæ; the metathorax opaque, the sides rounded and with a deep longitudinal impression in the middle; covered with silky pubescence; a spot at the lateral angles of the prothorax, another beneath the wings, and an interrupted line on the post-scutellum, yellow; the wings dark brown, with a rich purple iridescence, the posterior wings paler. Abdomen very smooth and highly polished.

Hab. Mexico.

Genus 7. DISCOELIUS.

Vespa, pt., *Panz. Faun. Germ.* 81. 18.

Eumenes, pt., *Spin. Ins. Lig.* ii. 190 (1806-8).

Discoelius, *Latr. Gen. Cr. et Ins.* iv. (1809).

Epipona, pt., *Spin. Faun. Chili*, vi. (1854).

1. DISCOELIUS ZONALIS.

B.M.

Vespa zonalis, *Panz. Faun. Germ.* 81. 18.

Eumenes zonalis, *Spin. Ins. Lig.* ii. 190.

Discoelius zonalis, *Latr. Gen. Crust. et Ins.* iv. 120.

St. Farg. Hym. ii. 603. 1.

Blanch. Règne Anim. Ill. Ins. t. 124. f. 4.

Sauss. Mon. Guêpes Sol. 26. 4 ♂ ♀.

Hab. France; Italy; Germany.

2. DISCOELIUS DUFOURII.

Discoelius Dufourii, *St. Farg. Hym.* ii. 605. 2 ♀.

Sauss. Mon. Guêpes Sol. 27. 5. t. 9. f. 5.

Hab. South of France.

3. DISCOELIUS CHILIENSIS.

Epipona Chiliensis, *Spin. Faun. Chili*, vi. 248 ♀.

Discoelius Chiliensis, *Sauss. Mon. Guêpes Sol.* 25. 1. t. 9. f. 3.

Hab. Chili.

4. DISCOELIUS MERULA.

Discoelius merula, *Curtis, Trans. Linn. Soc.* xviii. 325.

Epipona Chiliensis (var.), *Spin. Faun. Chili*, vi. 348.

Discoelius Spinolæ, *Sauss. Mon. Guêpes Sol.* 25. 2 ♂ ♀.

Hab. Chili.

5. DISCOELIUS PULCHELLUS.

B.M.

Discoelius pulchellus, *Sauss. Mon. Guêpes Sol. Supp.* 127. 15 ♂ ♀.

Hab. Mexico; Jamaica.

6. DISCOELIUS ELONGATUS.

Discoelius elongatus, *Sauss. Mon. Guêpes Sol. Supp.* 124. 11.
t. 6. f. 7 ♀.

Hab. Australia.

7. DISCOELIUS SPINOSUS.

Discoelius spinosus, *Sauss. Mon. Guêpes Sol. Supp.* 125. 12 ♀.

Hab. New South Wales. (Coll. J. S. Baly, Esq.)

8. DISCOELIUS EPHIPIUM.

Discoelius ephippium, *Sauss. Mon. Guêpes Sol. Supp.* 125. 13.
t. 6. f. 8 ♀.

Hab. New Holland.

9. DISCOELIUS INSIGNIS.

B.M.

Discoelius insignis, *Sauss. Mon. Guêpes Sol. Supp.* 126. 14 ♀.

Hab. New Holland.

10. DISCOELIUS VERREAUXII.

Discoelius Verreauxii, *Sauss. Mon. Guêpes Sol.* 26. 3. t. 9. f. 4 ♀.

Hab. Tasmania.

Genus 8. EUMENES.

Vespa, pt., *Linn. Faun. Suec.* 415 (1761).

Eumenes, *Latr. Hist. Nat. Ins.* (1802).

Sphex, pt., *Christ. Hym.* 315 (1791).

DIV. I.—Species of Europe.

1. EUMENES COARCTATA.

B.M.

Vespa coarctata, *Linn. Syst. Nat.* i. 950 ♀, & *Cab. Mus. Linn. Soc.*
Frisch. Ins. 9. t. 9.

Fabr. Syst. Ent. 370. 39; *Spec. Ins.* i. 467. 53; *Mant. Ins.*
i. 292. 65; *Ent. Syst.* ii. 276.

Villers, Ent. iii. 268.

Oliv. Encycl. Méth. 671.

Vespa pedunculata, *Panz. Faun. Germ.* 63. 8.

Vespa coronata, *Panz. Faun. Germ.* 63. 12.

Eumenes atricornis, *Curtis, Brit. Ent.* i. t. 13.

Eumenes coarctata, *Smith, Cat. Brit. Hym.* 44. 1.

Sauss. Mon. Guêpes Sol. 31. 2.

Hab. Europe.

2. EUMENES POMIFORMIS.

B.M.

Vespa pomiformis, *Rossi, Faun. Etrus.* 85. 86.

Schrank, Ins. Austr. 79.

Roes. Ins. ii. *Vesp.* t. 17. f. 8.

Geoff. Ins. ii. 376. 9.

Panz. Faun. Germ. 63. 7 ♀.

Oliv. Encycl. Méth. vi. 671.

Fabr. Ent. Syst. ii. 279.

Vespa coarctata, *Panz. Faun. Germ.* 63. 6 ♂.

- Vespa dumetorum*, *Panz. Faun. Germ.* 63. 4 ♀?
Eumenes arbustorum, *Schæff. Faun. Germ.* 179. 9.
Eumenes Frivaldzkyi, *Schæff. Faun. Germ.* 179. 10.
Sphex annularis, *Christ. Hym.* 315. t. 31. f. 7 ♀.
Sphex viatica, *Christ. Hym.* 315.
Sphex papillaria, *Christ. Hym.* 325. t. 32. f. 10 ♂.
Vespa viatica, *Fabr. Syst. Ent.* 20.
Eumenes pomiformis, *Fabr. Syst. Piez.* 287.
 St. Farg. Hym. ii. 600. 3.
 Blanch. Hym. ii. 600.
Eumenes atricornis, *Fabr. Syst. Piez.* 289.
Eumenes lunulata, *Fabr. Syst. Piez.* 290.
Hab. Europe.

3. EUMENES DUBIA.

- Eumenes dubia*, *Sauss. Mon. Guêpes Sol.* 32. 3 (var. *E. pomiformis*?).
Hab. Centre of France.

4. EUMENES BIPUNCTIS.

- Eumenes bipunctis*, *Sauss. Mon. Guêpes Sol.* 33. 4. t. 11. f. 7 ♀.
Hab. Europe.

5. EUMENES HUBERTI.

- Eumenes Huberti*, *Sauss. Mon. Guêpes Sol.* 33. 5. t. 11. f. 6
 (var. *E. unguiculus* ♂?).
Hab. France (Bordeaux).

6. EUMENES DIMIDIATA.

B.M.

- Eumenes dimidiata*, *Brullé, Expéd. Sc. de Morée*, 361.
Vespa pomiformis, *Panz. Faun. Germ.* 63. 7.
Eumenes Amedei, *St. Farg. Hym.* ii. 597.
 Lucas, Explo. Sc. d'Algér. iii. 227. t. 11. f. 1 ♀.
 Sauss. Mon. Guêpes Sol. 34. 6.
Hab. France (Montpellier); Algeria (Oran).

7. EUMENES UNGUICULA.

B.M.

- Vespa unguicula*, *Villers, Ent.* 40.
Eumenes conica, *Rossi, Mant. Ins.* 135. 299.
Vespa coangustata, *Rossi, Faun. Etrus.* ii. 84.
Eumenes coangustata, *Schæff. Faun. Germ.* 179. t. 7.
 Sulzer, Kenzeich. d. Ins. t. 19. f. a.

Eumenes coangustata, *Spin. Ins. Lig.* i. 82.

Sauss. Mon. Guêpes Sol. 34. 7.

Vespa infundibuliformis, *Oliv. Encycl. Méth.* vi. 672.

Sphex cursor, *Christ. Hym.* 314. t. 31. f. 6.

Sphex lapicida, *Christ. Hym.* 318. t. 32. f. 5.

Sphex coarctata, *Christ. Hym.* 320. t. 32. f. 6 ♂.

Eumenes dumetorum, *Schweizer, Ent. fasc.* 148.

Eumenes Olivieri, *St. Farg. Hym.* ii. 596. 1.

Blanch. Règne An. Illustr. Ins. t. 124. f. 1.

Hab. Europe; Algeria.

8. EUMENES SICHELII.

B.M.

Eumenes Sichelii, *Sauss. Mon. Guêpes Sol.* 36. 8. t. 10. f. 2 ♀.

Hab. Albania.

9. EUMENES TRIPUNCTATA.

Sphex tripunctata, *Christ. Hym.* 317. t. 32. f. 3.

Vespa trimaculata, *Weber, Obs. Entom.* 102. 6.

Eumenes venusta, *Fisch. Mag. Zool.* (1843) 1. t. 122. f. 1, 2 ♂.

Eumenes tripunctatus, *Sauss. Mon. Guêpes Sol. Supp.* 137. 21.

Hab. Russia (borders of the Ural).

10. EUMENES PICTETI.

Eumenes Picteti, *Sauss. Mon. Guêpes Sol.* 67. 54. t. 12. f. 3 ♀.

Hab. Middle of France (Montpellier).

11. EUMENES TAURICA.

Eumenes Tauricus, *Sauss. Mon. Guêpes Sol. Supp.* 137. 20.

Hab. Crimea.

DIV. II.—*Species of India; China; Java; Philippine Islands.*

12. EUMENES AFFINISSIMA.

Eumenes affinissima, *Sauss. Mon. Guêpes Sol.* 37. 9 ♂.

Hab. India.

13. EUMENES XANTHURA.

Eumenes xanthura, *Sauss. Mon. Guêpes Sol.* 46. 26. t. 10. f. 4 ♀.

Hab. India.

14. EUMENES CIRCINALIS.

B.M.

Eumenes circinalis, *Fabr. Syst. Piez.* 286. 4.*Sauss. Mon. Guêpes Sol.* 47. 27. t. 10. f. 7.*Hab.* India.

15. EUMENES CONICA.

B.M.

Vespa conica, *Fabr. Mant. Ins.* i. 293. 69; *Ent. Syst.* ii. 278. 88.*Eumenes conica*, *Fabr. Syst. Piez.* 285. 2.*Sauss. Mon. Guêpes Sol.* 52. 34.*Hab.* India; China; Philippine Islands.

16. EUMENES ESURIENS.

B.M.

Vespa esuriens, *Fabr. Mant. Ins.* i. 393. 75.*Oliv. Encycl. Méth.* vi. 673.*Vespa pediculata*, *Oliv. Encycl. Méth.* vi. 671.*Eumenes esuriens*, *Fabr. Syst. Piez.* 286. 7.*Sauss. Mon. Guêpes Sol.* 56. 40. t. 11. f. 2.*Eumenes gracilis*, *Sauss. Mon. Guêpes Sol.* 57. 41?*Eumenes campaniformis*, *Sauss. Mon. Guêpes Sol.* 55. 38.*Hab.* India.DIV. III.—*Species of India, China, and East India Islands.*

17. EUMENES EDWARSII.

B.M.

Eumenes Edwardsii, *Sauss. Mon. Guêpes Sol.* 60. 45. t. 11. f. 4 ♀.*Hab.* India (Bombay).

18. EUMENES FLAVOPICTA.

B.M.

Eumenes flavopicta, *Blanch. Dict. d'Hist. Nat. Hym.* ii. t. 11. f. 2.*Sauss. Mon. Guêpes Sol.* 65. 52 ♀.*Eumenes arcuata*, *Westw. Ins. Ind.* 90. t. 57. f. 3.*Hab.* India.

19. EUMENES BLANCHARDI.

B.M.

Eumenes Blanchardi, *Sauss. Mon. Guêpes Sol.* 66. 53. t. 12. f. 2 ♀.*Hab.* India (Pondicherry).

20. EUMENES EXIGUA.

Eumenes exiguus, *Sauss. Mon. Guêpes Sol. Supp.* 150. 39. t. 8.

f. 4, 4 a ♀.

Hab. India.

21. *EUMENES INDIANA*.

B.M.

Eumenes indianus, *Sauss. Mon. Guêpes Sol. Supp.* 136. 19. t. 7. f. 3 ♀.

Hab. India or Africa.

22. *EUMENES BREVIROSTRATA*.

B.M.

Eumenes brevirostratus, *Sauss. Mon. Guêpes Sol. Supp.* 136. t. 7. f. 1 ♀.

Hab. India.

23. *EUMENES DEPRESSA*.

Eumenes depressus, *Sauss. Mon. Guêpes Sol. Supp.* 135. 17 ♀.

Hab. India.

24. *EUMENES QUADRISPINOSA*.

Eumenes quadrispinosus, *Sauss. Mon. Guêpes Sol. Supp.* 134. 16. t. 7. f. 2, 2 g ♀.

Hab. India.

25. *EUMENES SUBLEVIS*.

B.M.

Female. Length 6 lines.—Black, smooth and shining: the head covered with fine shallow punctures; the clypeus, an angular spot on the mandibles at their base, the emargination of the eyes and a line behind them, a spot at the side of the posterior ocelli and a line in front of the anterior one extending to the base of the clypeus, yellow; the scape of the antennæ yellow in front, and the flagellum fulvous beneath. The thorax covered with minute shallow punctures; an interrupted transverse line on the prothorax, two longitudinal ones on the mesothorax, slightly divergent towards the head, two ovate spots on the scutellum, the tegulæ and a spot beneath the wings, a curved line on each side of the metathorax, the outer margin of which is angulated, yellow; the anterior and intermediate femora, tibiæ and tarsi yellow, the former with a dark stripe above, and the tarsi slightly ferruginous; a yellow spot on the intermediate coxæ outside; the posterior femora with a spot at their apex beneath; the wings slightly fuscous, darkest along their anterior margin. Abdomen: the first segment forming a long petiole which is finely roughened above and has a minute tooth on each side about the middle; the apical margin with a narrow yellow band; the apical margins of the second and third segments with a narrow yellow band which is interrupted on each side; the fourth segment with a

transverse yellow line in the middle of its posterior margin; a curved yellow spot on each side of the second segment beneath.

Hab. Borneo (Sarawak). (Coll. A. R. Wallace.)

26. *EUMENES FULVIPENNIS*.

B.M.

Female. Length 12 lines.—Black, with the wings pale reddish-yellow; of the size and form of *E. arcuatus*. The head and thorax closely and rather strongly punctured, very slightly shining; the labrum brown; the clypeus has the anterior margin slightly notched; the wings, with the nervures, ferruginous; the petiole smooth and shining; the rest of the abdomen subopaque; on each side of the petiole are two small indistinct pale oval spots; the legs black, with the claw-joint of the tarsi ferruginous.

The male closely resembles the female, and only differs in being rather smaller, and in having an obscure ferruginous stripe on the clypeus.

Hab. Celebes. (Coll. Madame Ida Pfeiffer.)

27. *EUMENES INFLEXA*.

Eumenes inflexus, *Sauss. Mon. Guêpes Sol. Supp.* 145. 33 ♀.

Hab. Probably Asiatic.

28. *EUMENES PUNCTATA*.

B.M.

Eumenes punctata, *Sauss. Mon. Guêpes Sol.* 37. 10.

Hab. China.

29. *EUMENES DECORATA*.

B.M.

Eumenes decoratus, *Smith, Trans. Ent. Soc. Lond.* n. ser. ii. 36.
Sauss. Mon. Guêpes Sol. Supp. 138. 22 ♀.

Hab. North China (Tein-Tung).

30. *EUMENES QUADRATA*.

B.M.

Eumenes quadratus, *Smith, Trans. Ent. Soc. Lond.* n. ser. ii. 37.

Hab. North China (Ning-po-Foo).

31. *EUMENES IMPERATRIX*.

Female. Length 10 lines.—Black: the head covered with large shallow confluent punctures; the clypeus with the basal half yellow; the scape in front, a spot between the antennæ and a line running from it up to the anterior stemma, yellow; the flagellum fulvous beneath; a narrow yellow indistinct line behind

the eyes. Thorax strongly punctured, with the scutellum and metathorax shining and less closely punctured; two yellow spots at the apex of the metathorax at the insertion of the abdomen; the anterior tibiae in front, the claw-joint of the anterior tarsi, and the extreme apex of the intermediate and posterior femora, yellow. Abdomen: the basal segment clavate, with a transverse interrupted narrow yellow line at the extreme apex above; the second segment with a broad, deeply emarginate fascia on its apical margin.

Hab. North China.

32. *EUMENES MELANOSOMA.*

B.M.

Eumenes melanosoma, *Sauss. Mon. Guêpes Sol.* 61. 46. t. 12. f. 1.

Hab. Java.

33. *EUMENES CURVATA.*

B.M.

Eumenes curvatus, *Sauss. Mon. Guêpes Sol. Supp.* 145. t. 8. f. 1.

Hab. Philippine Islands.

DIV. IV.—Species of Africa.

34. *EUMENES NIGRA.*

Eumenes nigra, *Brullé, Hist. Nat. Il. Canar.* ii. 89.

Sauss. Mon. Guêpes Sol. 38. 12.

Savigny, Descr. Egypt. Hym. t. 8. f. 3 ♀?

Hab. Canary Islands: Egypt?

35. *EUMENES DIMIDIATIPENNIS.*

B.M.

Eumenes dimidiatipennis, *Sauss. Mon. Guêpes Sol.* 51. 33.

Savigny, Descr. de l'Egypt. Hym. t. 8. f. 5.

Hab. Arabia (Djidda); Egypt; India (Punjaub).

36. *EUMENES ELEGANS.*

Eumenes elegans, *Sauss. Mon. Guêpes Sol.* 58. 42. t. 11. f. 3 ♀.

Hab. Arabia (Djidda); India.

37. *EUMENES CONCINNA.*

Eumenes concinnus, *Sauss. Mon. Guêpes Sol. Supp.* 144. 30.

Hab. Nubia.

38. EUMENES DISTINCTA.

Eumenes distinctus, *Sauss. Mon. Guêpes Sol. Supp.* 143. 29 ♂.

Hab. Africa.

39. EUMENES MACROCEPHALA.

Eumenes macrocephala, *Sauss. Mon. Guêpes Sol.* 37. 11.

Hab. Cape of Good Hope.

40. EUMENES CAFFRA.

B.M.

Vespa caffra, *Linn. Syst. Nat.* i. 951. 21.

Muell. Ed. Linn. Ins. ii. 885. 21.

Gmel. Ed. Linn. i. 2758. 21.

Oliv. Encycl. Méth. vi. 679.

Weber, Obs. Ent. 101. 3.

Sphex cruciata, *Christ. Hym.* 317. t. 32. f. 2.

Eumenes caffra, *Sauss. Mon. Guêpes Sol.* 45. 25.

Hab. Cape of Good Hope.

41. EUMENES PETIOLATA.

B.M.

Vespa petiolata, *Fabr. Sp. Ins.* i. 467; *Mant. Ins.* i. 292. 6^a;
Ent. Syst. ii. 278. 87.

Gmel. Ed. Linn. 2753. 51.

Oliv. Encycl. Méth. ii. 670.

Eumenes petiolata, *Fabr. Syst. Piez.* 284. 1.

Latr. Ins. iii. 360.

Westw. Ins. India, 90. t. 5. f. 2.

Sphex hesperus, *Christ. Hym.* 311. t. 31. f. 3 ♀.

Sphex rubicunda, *Christ. Hym.* 316. t. 32. f. 1 ♂.

Sphex turrimurarius, *Christ. Hym.* 321. t. 32. f. 32.

Sphex thoracica, *Christ. Hym.* 321. t. 32. f. 9 ♂.

Eumenes petiolatus, *Sauss. Mon. Guêpes Sol.* 47. 28.

Hab. Cape of Good Hope.

42. EUMENES HOTTENTOTTA.

Eumenes hottentotta, *Sauss. Mon. Guêpes Sol.* 63. 49 ♀.

Hab. Cape of Good Hope.

43. EUMENES ACUMINATA.

Eumenes acuminatus, *Sauss. Mon. Guêpes Sol. Supp.* 147. 36.
t. 8. f. 2 ♂.

Hab. Cape of Good Hope.

44. EUMENES DYSCHERA.

B.M.

Eumenes dyschera, *Sauss. Mon. Guêpes Sol.* 50. 31 ♀.*Hab.* Tropical Africa.

45. EUMENES TINCTOR.

B.M.

Sphex tinctor, *Christ. Hym.* 341. t. 31. f. 1.*Eumenes Savignyi*, *Guér. Icon. Règn. An.* 446. t. 72. f. 4.*Spin. Ann. Soc. Ent. Fr.* vii. 503 (1833).*Eumenes tinctor*, *Sauss. Mon. Guêpes Sol.* 49. 30.*Savigny, Descr. de l'Egypt.* t. 8. f. 4.*Hab.* Senegal; Congo; Egypt.

46. EUMENES TROPICA.

B.M.

Eumenes tropicalis, *Sauss. Mon. Guêpes Sol.* 54. 36 ♀.*Hab.* Senegal.

47. EUMENES ASINA.

Eumenes asina, *Sauss. Mon. Guêpes Sol.* 59. 43. t. 11. f. 1 ♀.*Hab.* Senegal.

48. EUMENES LEPELETIERI.

B.M.

Eumenes Lepeletierii, *Sauss. Mon. Guêpes Sol.* 45. 24. t. 10. f. 3 ♀.*Eumenes formosa*, *Sauss. Mon. Guêpes Sol.* 56. 39.*Hab.* Senegal.

49. EUMENES FENESTRALIS.

B.M.

Eumenes fenestralis, *Sauss. Mon. Guêpes Sol.* 53. 35. t. 10. f. 6.*Hab.* Congo; Senegal.

50. EUMENES ÆTHIOPICA.

B.M.

Eumenes æthiopica, *Sauss. Mon. Guêpes Sol.* 62. 47 ♀.*Hab.* Congo.

51. EUMENES LUCASIA.

Eumenes Lucasia, *Sauss. Mon. Guêpes Sol.* 68. 55 ♂.*Hab.* Abyssinia.

52. EUMENES INSULARIS.

B.M.

Female. Length 8 lines.—Black: the mandibles, labrum, clypeus and a spot above it, the flagellum beneath, and a narrow

line behind the eyes, ferruginous; the vertex rather finely and distantly punctured. The prothorax above, a small spot beneath the wings, an interrupted narrow line on the posterior margin of the post-scutellum, and a similar one on each side of the metathorax, ferruginous; the legs ferruginous, with the coxæ black, the thorax shining black above, finely and not closely punctured, the wings subhyaline, having a brownish tinge with a fine violet iridescence, the anterior margin of the superior pair having a dark fuscous stain. Abdomen smooth, covered with fine changeable pile; the petiole armed on each side with a short stout acute tooth, the extreme apex beneath slightly ferruginous.

Var. A narrow yellow line at the lower portion of the inner orbit of the eyes; the sides of the metathorax ferruginous.

Male.—Differs in having the clypeus and a spot above, and also a narrow line at the inner orbit of the eyes, not entering their emargination, yellow; otherwise, coloured like the variety of the female.

Hab. The Solomon Islands, or New Hebrides (*Voyage of H.M.S. Herald*).

This species is closely allied to *Eumenes Guerini* of Saussure, but the petiole is proportionably longer; it also bears a strong general resemblance to *E. xanthura*.

53. EUMENES GUERINI.

Eumenes Guerini, *Sauss. Mon. Guêpes Sol.* 62. 48 ♀.

Hab. Madagascar.

54. EUMENES REGINA.

Eumenes regina, *Sauss. Mon. Guêpes Sol.* 49. 29. t. 10. f. 8.

Hab. Madagascar.

55. EUMENES FLUCTUANS.

B.M.

Eumenes fluctuans, *Sauss. Mon. Guêpes Sol.* 43. 22 ♀.

Hab. New Holland.

56. EUMENES BICINCTA.

B.M.

Eumenes bicincta, *Sauss. Mon. Guêpes Sol.* 44. 23.

Hab. New Holland.

57. EUMENES LATREILLEI.

B.M.

Eumenes Latreillei, *Sauss. Mon. Guêpes Sol.* 51. 32. t. 10. f. 5.

Hab. New Holland.

58. EUMENES PHILANTES.

B.M.

Eumenes philantes, *Sauss. Mon. Guêpes Sol.* 54. 37 ♀.*Hab.* New Holland.

59. EUMENES ARCUATA.

B.M.

Vespa arcuata, *Fabr. Syst. Ent.* 371. 40; *Spec. Ins.* i. 467; *Mant. Ins.* i. 292. 66; *Ent. Syst.* ii. 276. 83.*Oliv. Encycl. Méth.* vi. 670.*Sphex arcuata*, *Christ. Hym.* 312.*Eumenes arcuata*, *Fabr. Syst. Piez.* 287. 11.*Sauss. Mon. Guêpes Sol.* 63. 50.*Hab.* New Holland; New Guinea (Triton Bay).

60. EUMENES URVILLEI.

B.M.

Eumenes Urvillei, *Sauss. Mon. Guêpes Sol.* 59. 44.*Hab.* Coast of New Guinea (Triton Bay).

61. EUMENES PRASLINA.

B.M.

Eumenes Praslina, *Guér. Voy. Coquille*, ii. 267. t. 9. f. 6 ♀.*Sauss. Mon. Guêpes Sol.* 64. 51.*Hab.* New Ireland (Port Praslin).DIV. V.—*Species of America.*

62. EUMENES URUGUAYENSIS.

Eumenes Uruguayensis, *Sauss. Mon. Guêpes Sol. Supp.* 139. 24. t. 7. f. 6 ♀.*Hab.* Brazil.

63. EUMENES CONSOBRINA.

Eumenes consobrinus, *Sauss. Mon. Guêpes Sol. Supp.* 140. 25 ♂.*Hab.* Brazil.

64. EUMENES GHILIANII.

Eumenes Ghilianii, *Spin. Mem. Accad. Torino*, xiii. 81. 62 ♂.*Sauss. Mon. Guêpes Sol. Supp.* 140. 26.*Hab.* Brazil (Para).

65. EUMENES VERSICOLOR.

B.M.

Eumenes versicolor, *Sauss. Mon. Guêpes Sol.* 71. 60 ♂.*Hab.* Brazil (Santarem). (Coll. H. W. Bates.)

66. EUMENES MICROSCOPICA.

Eumenes microscopica, *Sauss. Mon. Guêpes Sol.* 72. 62 ♀.*Hab.* Brazil.

67. EUMENES FILIFORMIS.

Eumenes filiformis, *Sauss. Mon. Guêpes Sol. Supp.* 146. 34 ♀.*Hab.* Brazil.

68. EUMENES GLOBICOLLIS.

Zethus globicollis, *Spin. Ann. Soc. Ent. Fr.* x. 150. t. 3. f. 6 (1841).*Eumenes globicollis*, *Sauss. Mon. Guêpes Sol. Supp.* 151. 40. t. 8. f. 6, 6a.*Hab.* Para.

69. EUMENES PUSILLA.

Eumenes pusillus, *Sauss. Mon. Guêpes Sol. Supp.* 149. 38.*Hab.* Brazil.

70. EUMENES PARVULA.

Eumenes parvulus, *Sauss. Mon. Guêpes Sol. Supp.* 149. 37. t. 8. f. 5, 5a.*Hab.* Brazil.

71. EUMENES AUROPILOSA.

B.M.

Male. Length 3 lines.—Black: the head closely punctured, the thorax coarsely so, the punctures confluent, both thinly covered with golden pile, the abdomen densely so. The clypeus slightly produced and emarginate in the middle; the scape in front and the flagellum beneath, ferruginous; a spot in the emargination of the eyes, and a line behind them, yellow. A spot on each side of the prothorax in front, another beneath the wings, the posterior margin of the prothorax, a minute spot behind the tegulæ, a narrow transverse line at the base of the scutellum, the post-scutellum, and two ovate spots on each side of the metathorax, yellow; the legs reddish-yellow, with the coxæ and base of the femora black. The wings subhyaline and iridescent, with a fuscous stain on their anterior margin. Abdo-

men: the basal segment campanulate, its apical margin yellow, with a yellow spot on each side uniting with the apical margin; the apical and lateral margins of the second segment, and an ovate spot on each side uniting with the margin, yellow; the third and following segments yellow; beneath, the apical margin of the second and the following segments yellow.

Hab. Brazil (Villa Nova).

72. *EUMENES CINGULATA.*

Eumenes cingulatus, *Fabr. Syst. Piez.* 287. 13.

Sauss. Mon. Guêpes Sol. Supp. 151. 41.

Hab. Cayenne.

73. *EUMENES FLAVICORNIS.*

Eumenes flavicornis, *Sauss. Mon. Guêpes Sol. Supp.* 141. 27.

t. 7. f. 4 ♂.

Hab. Venezuela.

74. *EUMENES CANALICULATA.*

B.M.

Vespa canaliculata, *Oliv. Encycl. Méth.* vi. 672.

Vespa diadema, *Fabr. Ent. Syst. Supp.* 263.

Eumenes diadema, *Fabr. Syst. Piez.* 285. 3.

Eumenes canaliculata, *Sauss. Mon. Guêpes Sol.* 68. 56. t. 11. f. 5.

Hab. South America.

75. *EUMENES ORBIGNII.*

Eumenes Orbignii, *Sauss. Mon. Guêpes Sol.* 69. 57 ♀.

Hab. Bolivia.

76. *EUMENES COLONA.*

B.M.

Eumenes colona, *Sauss. Mon. Guêpes Sol.* 70. 59 ♀.

Hab. Jamaica; Columbia.

77. *EUMENES ORNATA.*

Eumenes ornatus, *Sauss. Mon. Guêpes Sol. Supp.* 147. 35. t. 8. f. 3.

Hab. West Indies.

78. *EUMENES CALLIMORPHA.*

B.M.

Eumenes callimorpha, *Sauss. Mon. Guêpes Sol.* 71. 61. t. 12. f. 4.

Hab. Columbia.

91. EUMENES AMERICANA.

Eumenes Americana, *Sauss. Mon. Guêpes Sol.* 39. 13.

Hab. Mexico.

Genus 9. PACHYMENES.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).

Pachymenes, *Sauss. Mon. Guêpes Sol.* 73.

1. PACHYMENES SERICEA.

Pachymenes sericea, *Sauss. Mon. Guêpes Sol.* 74. 1. t. 12. f. 5.

Hab. Brazil.

2. PACHYMENES ATRA.

Pachymenes atra, *Sauss. Mon. Guêpes Sol.* 75. 2.

Hab. Brazil.

3. PACHYMENES PALLIPES.

B.M.

Vespa pallipes, *Oliv. Encycl. Méth.* vi. 675.

Pachymenes pallipes, *Sauss. Mon. Guêpes Sol.* 75. 3.

Hab. Cayenne; South America.

4. PACHYMENES BRUNNEA.

Pachymenes brunnea, *Sauss. Mon. Guêpes Sol.* 76. 4. t. 12. f. 6.

Hab. Cayenne; South America.

5. PACHYMENES VENTRICOSA.

Pachymenes ventricosa, *Sauss. Mon. Guêpes Sol.* 77. 5.

Hab. South Carolina.

6. PACHYMENES CHRYSOTHORAX.

B.M.

Pachymenes chrysothorax, *Sauss. Mon. Guêpes Sol. Supp.* 153. 43.

Hab. Brazil.

7. PACHYMENES OBSCURA.

B.M.

Female. Length 9 lines.—Black, with an obscure ferruginous tinge in parts; the clypeus deeply emarginate at the apex, smooth and slightly shining; the extreme base of the scape and the flagellum ferruginous, the latter slightly fuscous above towards the base. The posterior margin of the prothorax, two abbre-

vated longitudinal lines on the mesothorax, an obscure spot on each side of the scutellum and the post-scutellum, ferruginous; the anterior tibiae and tarsi in front, and the tips of the joints of the two posterior pairs, ferruginous; the wings flavo-hyaline; the metathorax with a deep longitudinal impression in the middle, and covered with a fine changeable pile. The second segment of the abdomen slightly wrinkled transversely on the disk.

Hab. Mexico.

This insect is placed with some hesitation in the genus *Pachy-
menes*; but the parts of the mouth cannot be examined: a single
example only has been obtained.

Genus 10. SYNAGRIS.

Vespa, pt., *Linn. Syst. Nat.* i. 951 (1766).

Synagris, *Latr. Gen. Crust. et Ins.* iv. 135 (1804).

Apis, pt., *Drury, Illustr. Exot. Ins.* ii.

1. SYNAGRIS CALIDA.

B.M.

Vespa calida, *Linn. Syst. Nat.* i. 952. 27.

Fabr. Syst. Ent. 366. 18; *Spec. Ins.* i. 462; *Mant. Ins.* i.
289. 27; *Ent. Syst.* ii. 262. 33; *Syst. Piez.* 259. 25.

Christ. Hym. 225.

Oliv. Encycl. Méth. vi. 683.

Gmelin, Ed. Linn. v. p. 2759.

Vespa carbonaria, *De Geer, Ins.* vii. 607. t. 45. f. 9.

Vespa Capensis, *Linn. Syst. Nat.* i. 952. 22.

Gmelin, Ed. Linn. v. p. 2758. 22.

Muell. Ed. Linn. Ins. ii. 887. 27.

Vespa (Crabro) microrrhœa, *Christ. Hym.* 218. t. 18. f. 6.

Vespa spiniventris, *Illig. Mag.* i. 887. 27.

Synagris calida, *Palis. de Beauv. Ins. Afr. et Amér.* 260. t. 10. f. 6.

St. Farg. Encycl. Méth. x. 510. 2; *Hym.* ii. 594. 4.

Guér. Icon. Règn. An. 446. t. 72. f. 3; *Voy. Abyss. Lefeb.*
vi. 362; *Reiche & Fairm. Voy. de Ferret et Galinier*, 452.
t. 29. f. 7, 8 ♂.

Sauss. Mon. Guêpes Sol. 79. 1.

Hab. Africa.

2. SYNAGRIS DENTATA.

Synagris dentata, *Sauss. Mon. Guêpes Sol.* 80. 2.

Hab. Africa (Senegal).

3. SYNAGRIS ÆSTUANS.

B.M.

Vespa æstuans, *Fabr. Ent. Syst.* ii. 262. 32; *Syst. Piez.* 258. 24.

Oliv. Encycl. Méth. vi. 683.

Gmelin, Ed. Linn. v. 2752. 48.

Synagris æstuans, *Pal. de Beauv. Ins. d'Afr. et Amér.* 260. t. 10. f. 5.

St. Farg. Encycl. Méth. x. 510. 3; *Hym.* ii. 594. 3.

Sauss. Mon. Guêpes Sol. 81. 3.

Hab. Africa.

4. SYNAGRIS ÆQUATORIALIS.

B.M.

Synagris æquatorialis, *Sauss. Mon. Guêpes Sol.* 81. 4 ♂.

Hab. Africa.

5. SYNAGRIS MIRABILIS.

B.M.

Synagris mirabilis, *Guér. Voy. en Abyss. de Lefeb.* vi. *Ins.* 359.

t. 8. f. 8.

Reiche & Fairm. Voy. en Abyss. de Ferret et Galinier, iii. 453.

t. 29. f. 10.

Sauss. Mon. Guêpes Sol. 82. 5 ♂.

Hab. Abyssinia.

6. SYNAGRIS CORNUTA.

B.M.

Vespa cornuta, *Linn. Syst. Nat.* i. 951. 20; *Mus. Lund. Utr.*

409. f. 3.

Fabr. Syst. Ent. 363. 7; *Ent. Syst.* ii. 255. 8.

Christ. Hym. 214. t. 18. f. 2.

Oliv. Encycl. Méth. vi. 678. t. 382. 10.

Gmelin, Ed. Linn. v. 2758. 20.

Muell. Ed. Linn. ii. 885. 20.

Apis cornuta, *Drury, Ill. Exot. Ins.* ii. 48. 3.

Synagris cornuta, *Latr. Hist. Ins.* iii. 360; *Hist. Nat. Crust. et Ins.* iv. 135.

St. Farg. Encycl. Méth. x. 510. 1; *Hym.* ii. 593.

Griff. Anim. Kingd. Ins. 106. f. 1. t. 107.

Sauss. Mon. Guêpes Sol. 82. 6. t. 13. 1.

Hab. Cape of Good Hope; Guinea.

7. SYNAGRIS XANTHURA.

Synagris xanthura, *Sauss. Mon. Guêpes Sol. Supp.* 155. 44 ♀.

Hab. Senegal.

8. SYNAGRIS BELLICOSA.

Synagris bellicosa, *Sauss. Mon. Guêpes Sol.* 84. 7.

Hab. Senegal.

9. SYNAGRIS ABYSSINICA.

B.M.

Synagris Abyssinica, *Guér. Voy. en Abyss. de Lefeb.* vi. 360.

Reiche & Fairm. Voy. en Abyss. de Ferret et Galinier, iii. 453.
t. 29. f. 9 ♂.

Hab. Abyssinia.

10. SYNAGRIS MINUTA.

Synagris minuta, *Sauss. Mon. Guêpes Sol.* 85. 9 ♂.

Hab. Cape of Good Hope.

11. SYNAGRIS SPINOSUSCULA.

Synagris spinosuscula, *Sauss. Mon. Guêpes Sol.* 85. 10 ♂.

Hab. Abyssinia.

12. SYNAGRIS ANALIS.

B.M.

Synagris analis, *Sauss. Mon. Guêpes Sol.* 86. 11. t. 13. f. 5 ♂.

Hab. Abyssinia.

13. SYNAGRIS HUBERTI.

Synagris Huberti, *Sauss. Mon. Guêpes Sol. Supp.* 156. 45. t. 8.
f. 8, 8 a ♂.

Hab. Tropical Africa.

14. SYNAGRIS EMARGINATA.

B.M.

Synagris emarginata, *Sauss. Mon. Guêpes Sol. Supp.* 157. 46 ♂.

Hab. Africa.

15. SYNAGRIS PENTAMERIA.

Synagris pentameria, *Sauss. Mon. Guêpes Sol.* 87. 12 ♂.

Hab. Cape of Good Hope.

16. SYNAGRIS ABDOMINALIS.

Synagris abdominalis, *Sauss. Mon. Guêpes Sol. Supp.* 157. 47.
t. 8. f. 7 ♂.

Hab. Africa.

17. SYNAGRIS SPINOLÆ.

Synagris Spinolæ, *Sauss. Mon. Guêpes Sol. Supp.* 158. 48. t. 8.
f. 9, 9 a ♂.

Hab. Spain.

Genus 11. MONTEZUMIA.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).

Eumenes, pt., *Fabr. Syst. Piez.* 288 (1804).

Odynerus, pt., *Spin. Ann. Soc. Ent. Fr.* x. 127 (1841).

Montezumia, *Sauss. Mon. Guêpes Sol.* 87.

1. MONTEZUMIA RUFIDENTATA.

B.M.

Montezumia rufidentata, *Sauss. Mon. Guêpes Sol.* 88. 1 ♀.

Hab. Brazil.

2. MONTEZUMIA AZUREIPENNIS.

B.M.

Montezumia azureipennis, *Sauss. Mon. Guêpes Sol.* 89. 2 ♀.

Hab. Brazil.

3. MONTEZUMIA AZURESCENS.

Odynerus? azurescens, *Spin. Compt. Rend. Hym. Mem. Accad.*
Torino, xiii. new ser. 83. 64.

Montezumia rufipes, *Sauss. Mon. Guêpes Sol.* 89. 3. t. 15. f. 1 ♀.

Hab. Brazil.

4. MONTEZUMIA RUBRITARSIS.

Montezumia rubritarsis, *Sauss. Mon. Guêpes Sol.* 90. 4 ♀.

Hab. Brazil.

5. MONTEZUMIA CÆRULEA.

B.M.

Montezumia cærulea, *Sauss. Mon. Guêpes Sol.* 90. 5. t. 12. f. 8 ♀.

Hab. Guiana.

6. MONTEZUMIA MOROSA.

Montezumia morosa, *Sauss. Mon. Guêpes Sol.* 90. 6.

Hab. South America.

7. MONTEZUMIA FERRUGINEA.

Montezumia ferruginea, *Sauss. Mon. Guêpes Sol.* 91. 7.

Hab. South America.

8. MONTEZUMIA ANCEPS.

Montezumia anceps, *Sauss. Mon. Guêpes Sol.* 92. 8 ♀.

Hab. Chili.

9. MONTEZUMIA PLATINA.

Montezumia platina, *Sauss. Mon. Guêpes Sol.* 92. 9. t. 15. f. 3 ♀.

Hab. Buenos Ayres.

10. MONTEZUMIA CORTESIA.

Montezumia cortesia, *Sauss. Mon. Guêpes Sol.* 92. 10. t. 15. f. 2 ♀.

Hab. Mexico.

11. MONTEZUMIA LEPRIEURI.

Odynerus Leprieuri, *Spin. Ann. Soc. Ent. Fr.* 1st ser. x. 127.

Montezumia pelagica, *Sauss. Mon. Guêpes Sol.* 93. 11.

Hab. Brazil.

12. MONTEZUMIA SPINOLÆ.

Montezumia Spinolæ, *Sauss. Mon. Guêpes Sol.* 93. 12. t. 12. f. 9.

Hab. — ?

13. MONTEZUMIA INFUNDIBULIFORMIS.

B.M.

Eumenes infundibuliformis, *Fabr. Syst. Piez.* 288. 13.

Montezumia dimidiata, *Sauss. Mon. Guêpes Sol.* 94. 13.

Hab. Mexico.

14. MONTEZUMIA MEXICANA.

Montezumia Mexicana, *Sauss. Mon. Guêpes Sol.* 94. 14.

Hab. Mexico.

15. MONTEZUMIA CHALYBEA.

B.M.

Montezumia chalybea, *Sauss. Mon. Guêpes Sol. Supp.* 161. 49.
t. 9. f. 2, 2 d.

Hab. Brazil.

16. MONTEZUMIA PETIOLATA.

Montezumia petiolata, *Sauss. Mon. Guêpes Sol. Supp.* 161. 50.
t. 9. f. 1, 1 a, 1 b.

Hab. Brazil.

17. MONTEZUMIA NIGRICEPS.

Eumenes nigriceps, *Spin. Ann. Soc. Ent. Fr.* 1st ser. x. 128. 79.
Sauss. Mon. Guêpes Sol. Supp. 162. 51.

Hab. Cayenne.

18. MONTEZUMIA INFERNALIS.

Odynerus infernalis, *Spin. Compt. Rend. Ins. Mem. Accad. Torino*,
xiii. 84. 65.

Sauss. Mon. Guêpes Sol. Supp. 162. 52.

Hab. Para.

19. MONTEZUMIA ANALIS.

B.M.

Montezumia analis, *Sauss. Mon. Guêpes Sol. Supp.* 163. 53.

Hab. South America.

20. MONTEZUMIA SEPULCHRALIS.

Montezumia sepulchralis, *Sauss. Mon. Guêpes Sol. Supp.* 163. 54.

Hab. Brazil.

21. MONTEZUMIA MORTUORUM.

Montezumia mortuorum, *Sauss. Mon. Guêpes Sol. Supp.* 164. 55.

Hab. Brazil.

22. MONTEZUMIA BRASILIENSIS.

Montezumia Brasiliensis, *Sauss. Mon. Guêpes Sol. Supp.* 164. 56.

Hab. Brazil.

23. MONTEZUMIA MACROCEPHALA.

Montezumia macrocephala, *Sauss. Mon. Guêpes Sol. Supp.* 165.

57 ♂. t. 9. f. 3.

Hab. Brazil.

24. MONTEZUMIA CARINULATA.

B.M.

Odynerus carinulatus, *Spin. Compt. Rend. Hym. Mem. Accad.*
Torino, xiii. 67. 63.

Montezumia carinulata, *Sauss. Mon. Guêpes Sol. Supp.* 166. 58.

Hab. Brazil (Para).

25. MONTEZUMIA INDICA.

B.M.

Montezumia Indica, *Sauss. Mon. Guêpes Sol. Supp.* 167. 59. t. 9. f. 4.

Hab. Java.

Genus 12. MONOBIA.

Vespa, pt., *Linn. Syst. Nat.* i. 951 (1766).

Odynerus, pt., *St. Farg. Hym.* ii. 619 (1841).

Monobia, *Sauss. Mon. Guêpes Sol.* 94 (1852).

1. MONOBIA QUADRIDENS.

B.M.

Vespa quadridens, *Linn. Syst. Nat.* i. 951. 15.

Christ. Hym. 234.

Muell. Ed. Linn. Ins. ii. 883. 15.

Gmel. Ed. Linn. Syst. Nat. ii. 27. 55. 15.

Vespa uncinata, *Fabr. Syst. Ent.* 367. 22; *Spec. Ins.* i. 463;

Mant. i. 289. 32; *Ent. Syst.* ii. 264. 39; *Syst. Piez.* 259. 31.

Oliv. Encycl. Méth. vi. 685.

Vespa cincta-nigra, *De Geer, Ins.* iii. 583. 8. t. 29. f. 12.

Odynerus uncinatus, *St. Farg. Hym.* ii. 619. 9.

Monobia quadridens, *Sauss. Mon. Guêpes Sol.* 97. 4. t. 16. f. 1.

Hab. North Carolina; North America.

2. MONOBIA SYLVATICA.

B.M.

Monobia sylvatica, *Sauss. Mon. Guêpes Sol.* 95. 1. t. 15. f. 7.

Hab. North America.

3. MONOBIA ANOMALA.

Monobia anomala, *Sauss. Mon. Guêpes Sol.* 96. 3. t. 15. f. 4.

Hab. Brazil.

4. MONOBIA ANGULOSA.

B.M.

Monobia angulosa, *Sauss. Mon. Guêpes Sol.* 98. 5. t. 15. f. 5.

Hab. Brazil.

5. MONOBIA APICALIPENNIS.

B.M.

Monobia apicalipennis, *Sauss. Mon. Guêpes Sol.* 98. 6. t. 15. f. 6.

Hab. Brazil (Para).

6. *MONOBIA CYANIPENNIS*.

Odynerus cyanipennis, Guér. *Voy. Coq. Ins.* 264. t. 9. f. 5.

Monobia cyanipennis, Sauss. *Mon. Guêpes Sol.* 96. 2.

Hab. Chili (Payta).

7. *MONOBIA EGREGIA*.

Monobia egregia, Sauss. *Mon. Guêpes Sol. Supp.* 168. 60. t. 9. f. 5.

Hab. West India Islands.

Genus 13. *ABISPA*.

Vespa, pt., *Fabr. Syst. Ent.* 362 (1775).

Odynerus, pt., Guér. *Voy. Coq. Ins.* 265 (1822-25).

Abispa, Mitchell, *Exped. East. Austr.* i. 104 (1838).

Monorebia, Sauss. *Mon. Guêpes Sol.* 98 (1852).

1. *ABISPA EPHIPPIMUM*.

B.M.

Vespa ephippium, *Fabr. Syst. Ent.* 362. 2; *Mus. Dom. Banks.* ;

Mant. Ins. i. 287. 3; *Ent. Syst.* ii. 254. 3; *Syst. Piez.* 254. 3.

Christ. Hym. 237.

Oliv. Encycl. Méth. vi. 677.

Gmelin, Ed. Linn. Syst. Nat. i. 2748. 36.

Abispa ephippium, Mitchell, *Exped. East. Austr.* i. 104.

Smith, Trans. Ent. Soc. Lond. 2nd ser. 177. t. 26. f. 1, 2.

Sauss. Mon. Guêpes Sol. Supp. 170.

Monorebia ephippium, Sauss. *Mon. Guêpes Sol.* 100. 2. t. 15. f. 9.

Hab. Australia.

2. *ABISPA AUSTRALIS*.

B.M.

Female. Length 1 inch.—This species closely resembles *A. splendida*, but appears to be intermediate between that species and *A. ephippium*. From *A. splendida* it differs in having the head entirely yellow; the scutellum and post-scutellum yellow; the metathorax is proportionably longer, its lateral posterior angles are acute, and on each side is a sharp serrated ridge; the basal segment of the abdomen has the sides less distinctly rounded. From *A. ephippium* it is distinguished by the colouring of the basal segment of the abdomen, which in this species is black, with a broad yellow band on its apical margin which widens at the sides; the segment is also more campanulate than in *A. ephippium*, which has the segment entirely yellow.

Hab. Port Essington.

This insect is regarded by Saussure as a variety of *A. splendida*;

if it be a variety, it must, I think, be so of *A. ephippium*: this point must be left for future determination by some entomologist resident in Australia who can carefully observe the habits of the insect.

3. ABISPA SPLENDIDA.

B.M.

Odynerus splendidus, *Guér. Voy. Cog. Ins.* 265.

Monorebia splendida, *Sauss. Mon. Guêpes Sol.* 99. 1.

Abispa splendida, *Sauss. Mon. Guêpes Sol. Supp.* 169. t. 15. f. 8.

Hab. Australia; Tasmania.

Genus 14. RHYNCHIUM.

Vespa, pt., *Fabr. Ent. Syst.* ii. 265 (1793).

Polistes, pt., *Fabr. Syst. Piez.* 273 (1804).

Rygius, *Spin. Ins. Ligur.* i. (1806).

Odynerus, pt., *Guér. Voy. Ind. Or. de Bélanger, Zool.* 503 (1834).

Rhynchium, *Sauss. Mon. Guêpes Sol. Supp.* 170 (1854-56).

Ancistrocerus, pt., *Smith, Trans. Ent. Soc. Supp.* n. s. ii. 36.

DIV. I.—Species of Europe.

1. RHYNCHIUM OCULATUM.

B.M.

Vespa oculata, *Fabr. Spec. Ins.* i. 463; *Mant. Ins.* i. 289. 35;

Ent. Syst. ii. 265. 43.

Oliv. Encycl. Méth. vi. 685.

Rossi, Faun. Etrus. ii. 85.

Villers, Ent. iii. 235. 21.

Rygius Europeum, *Spin. Ins. Lig.* i. 86.

Latr. Gen. Crust. et Ins. iv. 139.

St. Farg. Hym. ii. 680. 2.

Sauss. Mon. Guêpes Sol. 107. 8.

Rhynchium Lefevrei, *St. Farg. Hym.* ii. 679. 1 (var.).

Hab. Central Europe; Italy; Algeria.

DIV. II.—Species of India and China.

2. RHYNCHIUM NITIDULUM.

B.M.

Vespa nitidula, *Fabr. Ent. Syst. Suppl.* 262. 44; *Syst. Piez.* 260. 35.

Rygius nitidulum, *Sauss. Mon. Guêpes Sol.* 105. 5.

Hab. India.

3. RHYNCHIUM BENGALENSE.

Rhynchium Bengalense, *Sauss. Mon. Guêpes Sol. Supp.* 167. 66.
t. 9. f. 8.

Hab. Bengal.

4. RHYNCHIUM ATRUM.

B.M.

Ryngchium atrum, *Sauss. Mon. Guêpes Sol.* 109. 11.

Hab. India.

5. RHYNCHIUM HÆMORRHOIDALE.

B.M.

Vespa hæmorrhoidalis, *Fabr. Syst. Ent.* 366. 12; *Spec. Ins.* i. 463; *Mant. Ins.* i. 289. 29; *Ent. Syst.* ii. 263. 36; *Syst. Piez.* 259. 28.

Oliv. Encycl. Méth. vi. 683.

Christ. Hym. 242.

Odynerus dimidiatus, *Guér. Voy. aux Ind. Or. de Bélanger, Zool.* 503. t. 4. f. 4.

Ryngchium hæmorrhoidale, *Sauss. Mon. Guêpes Sol.* 109. 12.

Ryngchium parentissimum, *Sauss. Mon. Guêpes Sol.* 111. 14.

Hab. India; Java; Cape of Good Hope.

6. RHYNCHIUM SANGUINEUM.

Ryngchium sanguineum, *Sauss. Mon. Guêpes Sol.* 110. 13.

Hab. Java.

7. RHYNCHIUM BRUNNEUM.

B.M.

Vespa quinquecincta, *Fabr. Ent. Syst.* ii. 261; *Syst. Piez.* 288. 23.

Oliv. Encycl. Méth. Ins. vi. 682. 63.

Vespa brunnea, *Fabr. Ent. Syst.* ii. 264. 41; *Syst. Piez.* 260. 33.

Odynerus brunneus, *Latr. Gen. Crust. et Ins.* iv. 136. t. 14. f. 3.

Ryngchium brunneum, *Sauss. Mon. Guêpes Sol.* 112. 16. t. 14. f. 4.

Hab. Bengal.

8. RHYNCHIUM CARNATICUM.

B.M.

Vespa carnatica, *Fabr. Ent. Syst. Supp.* 261; *Syst. Piez.* 258. 22.

Ryngchium carnaticum, *Sauss. Mon. Guêpes Sol.* 112. 17 (var. *R. brunneum*?).

Hab. Bengal.

9. RHYNCHIUM METALLICUM.

B.M.

Rygchium metallicum, *Sauss. Mon. Guépes Sol.* 114. 21. t. 14. f. 8.*Hab.* India (Madras).

10. RHYNCHIUM ARGENTATUM.

B.M.

Vespa argentata, *Fabr. Syst. Piez.* 260. 39.*Rygchium argentatum*, *Sauss. Mon. Guépes Sol.* 115. 22.*Hab.* India.

11. RHYNCHIUM MELLYI.

Rygchium Mellyi, *Sauss. Mon. Guépes Sol.* 116. 24.*Hab.* India; China.

12. RHYNCHIUM DICHOTOMUM.

Rygchium dichotomum, *Sauss. Mon. Guépes Sol.* 116. 25.*Hab.* India.

13. RHYNCHIUM MANDARINIUM.

Rhynchium mandarinium, *Sauss. Mon. Guépes Sol. Supp.* 180. 73.*Hab.* China.

14. RHYNCHIUM FLAVOPUNCTATUM.

Ancistrocerus flavopunctatus, *Smith, Trans. Ent. Soc. Supp.* new ser. ii. 36. t. 9. f. 7.*Hab.* China (Teing-Tung).

15. RHYNCHIUM FLAVOMARGINATUM.

B.M.

Rhynchium flavomarginatum, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 35.*Sauss. Mon. Guépes Sol. Supp.* 177. 68. t. 9. f. 7.*Hab.* China.

16. RHYNCHIUM SMITHII.

Rhynchium Smithii, *Sauss. Mon. Guépes Sol. Supp.* 174. 62.*Hab.* China.

17. RHYNCHIUM ORNATUM.

B.M.

Rhynchium ornatum, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. ii. t. 8. f. 10.*Sauss. Mon. Guépes Sol. Supp.* 173. 61.*Hab.* China.

DIV. III.—*Species of Africa.*

18. RHYNCHIUM BIOCULATUM.

B.M.

Rhynchium bioculatum, *Sauss. Mon. Guêpes Sol. Supp.* 183. 78.
Rygcium auro-maculatum, *Sauss. Mon. Guêpes Sol.* 104. 4?

Hab. Africa.

19. RHYNCHIUM SICHELII.

Rhynchium Sichelii, *Sauss. Mon. Guêpes Sol. Supp.* 176. 65.

Hab. Africa.

20. RHYNCHIUM LATERALE.

B.M.

Vespa lateralis, *Fabr. Spec. Ins.* i. 466; *Mant.* i. 29. 2; *Ent. Syst.* ii. 275. 77.

Polistes lateralis, *Fabr. Syst. Piez.* 233. 22.

Vespa marginella, *Fabr. Ent. Syst.* ii. 263. 34; *Syst. Piez.* 259. 26.

Vespa Africanum, *Fabr. Syst. Piez.* 257. 19.

Rygcium Africanum, *Sauss. Mon. Guêpes Sol.* 108. 10.

Rhynchium laterale, *Sauss. Mon. Guêpes Sol. Supp.* 171. t. 14. f. 3.

Hab. Africa.

21. RHYNCHIUM DIMIDIATUM.

Odynerus dimidiatus, *Spin. Ann. Soc. Ent. Fr.* vii. 502.

Rhynchium dimidiatum, *Sauss. Mon. Guêpes Sol. Supp.* 182. 76.

Hab. Africa.

22. RHYNCHIUM FALLAX.

B.M.

Rhynchium fallax, *Sauss. Mon. Guêpes Sol. Supp.* 175. 63.

Hab. North Africa.

23. RHYNCHIUM RUBENS.

Rhynchium rubens, *Sauss. Mon. Guêpes Sol. Supp.* 181. 75.

Hab. Cape of Good Hope.

24. RHYNCHIUM XANTHURUM.

Rhynchium xanthurum, *Sauss. Mon. Guêpes Sol. Supp.* 182. 77.

Hab. Cape of Good Hope.

25. RHYNCHIUM SYNAGROIDES.

B.M.

Rygcium synagroides, *Sauss. Mon. Guêpes Sol.* 103. 1. t. 14. f. 2 δ.

Hab. Tropical Africa.

26. RHYNCHIUM AURO-MACULATUM.

B.M.

Ryngchium auro-maculatum, *Sauss. Mon. Guêpes Sol.* 104. 4. t. 14. f. 1.

Hab. Senegal; Java. (Coll. F. Smith.)

27. RHYNCHIUM CYANOPTERUM.

B.M.

Ryngchium cyanopterum, *Sauss. Mon. Guêpes Sol.* 108. 9.
Savig. Descr. Egypt. Hym. t. 9. f. 9.

Hab. Senegal; Egypt.

28. RHYNCHIUM SABULOSUM.

B.M.

Rhynchium sabulosum, *Sauss. Mon. Guêpes Sol. Supp.* 179. 70.

Hab. Senegal.

29. RHYNCHIUM ARDENS.

Odynerus ardens, *Guér. Voy. en Abyss. de Lefeb.* 362. t. 8. f. 9.
Ryngchium ardens, *Sauss. Mon. Guêpes Sol.* 104. 3 ♂.

Hab. Abyssinia.

30. RHYNCHIUM NILOTICUM.

Rhynchium niloticum, *Sauss. Mon. Guêpes Sol. Supp.* 181. 74.

Hab. Abyssinia.

31. RHYNCHIUM ABYSSINICUM.

B.M.

Ryngchium Abyssinicum, *Sauss. Mon. Guêpes Sol.* 103. 2 ♀.

Hab. Abyssinia.

32. RHYNCHIUM GRAYI.

B.M.

Rhynchium Grayi, *Sauss. Mon. Guêpes Sol. Supp.* 175. 64.

Hab. Port Natal.

33. RHYNCHIUM MULTISPINOSUM.

Rhynchium multispinosum, *Sauss. Mon. Guêpes Sol. Supp.* 177. 67.

Hab. Port Natal.

34. RHYNCHIUM RADIALE.

B.M.

Rhynchium radiale, *Sauss. Mon. Guêpes Sol. Supp.* 179. 71.

Hab. Port Natal.

DIV. IV.—*Species of Madagascar and New Guinea.*

35. RHYNCHIUM MADEGASSE.

Ryngchium Madegasse, *Sauss. Mon. Guêpes Sol.* 111. 15 ♀.

Hab. Madagascar.

36. RHYNCHIUM TRANSVERSUM.

B.M.

Vespa abdominalis, *Illig. Mag. F. Ins.* (1801) 192.

Vespa transversa, *Fabr. Syst. Piez.* 257. 16.

Ryngchium transversum, *Sauss. Mon. Guêpes Sol.* 117. 26. t. 14. f. 7 ♀.

Ryngchium dichotomum, *Sauss. Mon. Guêpes Sol.* 116. 25. t. 14. f. 7?

Hab. Madagascar.

37. RHYNCHIUM LIMBATUM.

Ryngchium limbatum, *Sauss. Mon. Guêpes Sol.* 117. 27. t. 13. f. 9.

Hab. Madagascar.

38. RHYNCHIUM ZONALE.

Ryngchium zonale, *Sauss. Mon. Guêpes Sol.* 113. 19.

Hab. New Guinea.

39. RHYNCHIUM ANNULIFERUM.

Ryngchium annuliferum, *Boisd. Voy. de l'Astrol.* vi. 654.

Sauss. Mon. Guêpes Sol. 118.

Hab. New Guinea (Carteret Harbour).

40. RHYNCHIUM RUFIPES.

B.M.

Vespa rufipes, *Fabr. Syst. Ent.* 367. 23; *Spec. Ins.* i. 463; *Mant.*

Ins. i. 289. 33; *Ent. Syst.* ii. 264. 40; *Syst. Piez.* 259. 32.

Christ. Hym. 240.

Oliv. Encycl. Méth. vi. 685.

Odynerus rufipes, *Guér. Voy. de la Coq. Ins.* 265.

Ryngchium rufipes, *Sauss. Mon. Guêpes Sol.* 115. 23.

Hab. Otaheite; New Guinea.

DIV. V.—*Species of Australia and Tasmania.*

41. RHYNCHIUM DECORATUM.

Rhynchium decoratum, *Sauss. Mon. Guêpes Sol. Supp.* 180. 72. t. 9. f. 6.

Hab. New Holland.

42. RHYNCHIUM ALECTO.

Odynerus Alecto, *St. Farg. Hym.* ii. 647. 32.

Rhynchium Alecto, *Sauss. Mon. Guépes Sol.* 114. 20.

Hab. New Holland.

43. RHYNCHIUM SUPERBUM.

Rhynchium superbum, *Sauss. Mon. Guépes Sol.* 113. 18 ♀.

Hab. New Holland.

44. RHYNCHIUM MIRABILE.

Rhynchium mirabile, *Sauss. Mon. Guépes Sol.* 106. 6. t. 14. f. 5.

Hab. Tasmania.

DIV. VI.—*Species of North America.*

45. RHYNCHIUM DORSALE.

B.M.

Vespa dorsalis, *Fabr. Syst. Ent.* 367. 25; *Ent. Syst.* ii. 265. 44.

Oliv. Encycl. Méth. vi. 685. 81.

Polistes dorsalis, *Fabr. Syst. Piez.* 273. 19.

Rhynchium balteatum, *Say, Bost. Journ. Nat. Hist.* i. 383. 1. (1837).

Rhynchium Louisianum, *Sauss. Mon. Guépes Sol.* 171. t. 13. f. 10.

Hab. United States.

Genus 15. ODYNERUS.

Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).

Epipone, *Latr. Hist. Nat. Ins.* (1804).

Odynerus, *Latr. Hist. Nat. Ins.* (1804).

Symmorphus, *Wesm. Mon. Odyn. Belg.* (1833).

Oplopus, *Wesm. Mon. Odyn. Belg.* (1833).

Ancistrocerus, *Wesm. Mon. Odyn. Belg.* (1833).

Pterochilus, pt., *Herr.-Schäff. Faun. Germ.* 173.

DIV. I.—*Species of Europe.*

1. ODYNERUS CRASSICORNIS.

B.M.

Vespa muraria, *Scop. Ent. Carn.* 828.

Vespa parietum, *Fabr. Ent. Syst.* ii. 265. 45; *Syst. Piez.* 261. 44.

Schrank, Faun. Boic. 253. 2208.

Odynerus parietum, *Latr. Hist. Nat. Ins.* xiii. 347.

Spin. Ins. Lig. ii. 180.

Schrank, Faun. Boic. ii. 253. 2208.

Vespa crassicornis, *Panz. Faun. Germ.* 53. 8.

Schæff. Icon. Ins. Ratisb. t. 24. f. 3.

Vespa bipunctata, *Villers, Ent.* iii. 24.

Odynerus crassicornis, *Wesm. Mon. Belg.* 39. 8.

St. Farg. Hym. ii. 663. 41.

Sauss. Mon. Guêpes Sol. 123. 1, & *Supp.* 117. 79. t. 10. f.

Symmorphus crassicornis, *Wesm. Mon. Odyn. Belg. Supp.* 2.

Hab. Europe.

2. ODYNERUS MURARIUS.

B.

Vespa muraria, *Linn. Faun. Suec.* 1674; *Syst. Nat.* i. 950.

& *Cab. Mus. Linn. Soc.*

Gmel. Ed. Linn. i. 2751. 8.

Odynerus murarius, *Sauss. Mon. Guêpes Sol. Supp.* 188. 80. t. 1
f. 1.

Hab. Scandinavia.

3. ODYNERUS NIDULATOR.

Odynerus nidulator, *Sauss. Mon. Guêpes Sol. Supp.* 189. 31.

Hab. South of Europe.

4. ODYNERUS ARCTICUS.

Odynerus arcticus, *Sauss. Mon. Guêpes Sol. Supp.* 189. 82.

Hab. Sweden.

5. ODYNERUS SUECICUS.

Odynerus Suecicus, *Sauss. Mon. Guêpes Sol. Supp.* 190. 83. t. 10
f. 3 ♀.

Hab. Sweden.

6. ODYNERUS ALLOBROGUS.

Odynerus allobrogus, *Sauss. Mon. Guêpes Sol. Supp.* 190. 84.
t. 10. f. 4 ♀.

Hab. Mountains of Savoy.

7. ODYNERUS GRACILIS.

B.M.

Odynerus gracilis, *Brullé, Expéd. Sc. de Morée, Ins.* iii. t. 50. f. 3.

Odynerus elegans, *Wesm. Mon. Odyn. Belg.* 42. 7.

St. Farg. Hym. ii. 664. 13.

Herr.-Schæff. Faun. Germ. 154. 17.

Sauss. Mon. Guêpes Sol. 124. 2.

Hab. Europe.

8. ODYNERUS HERRICHIANUS.

Odynerus Herrichianus, *Sauss. Mon. Guêpes Sol. Supp.* 191. 85.
Hab. Germany.

9. ODYNERUS SINUATUS.

B.M.

Vespa sinuata, *Fabr. Ent. Syst.* ii. 270; *Syst. Piez.* 264. 61.

Odynerus bifasciatus, *Spin. Ins. Lig.* i. 184.

Wesm. Mon. Odyn. Belg. 45. 8.

St. Farg. Hym. ii. 665. 44.

Sauss. Mon. Guêpes Sol. 124. 3.

Symmorphus bifasciatus, *Wesm. Mon. Odyn. Belg. Supp.* 2. 10.

Odynerus connexus, *Curtis, Brit. Ent.* iii. t. 138.

Odynerus sinuatus, *Sauss. Mon. Guêpes Sol. Supp.* 192. 86.

Hab. Europe.

10. ODYNERUS BIFASCIATUS.

B.M.

Vespa bifasciata, *Linn. Faun. Suec.* 1683; *Syst. Nat.* i. 950. 14.

Fabr. Ent. Syst. ii. 269. 60; *Syst. Piez.* 264. 59.

Christ. Hym. 234.

Oliv. Encycl. Méth. vi. 687.

Villers, Entom. iii. 270. 11.

Gmel. Ed. Linn. i. 2757. 14.

Muell. Ins. ii. 883. 14.

Odynerus bifasciatus, *Zett. Ins. Lapp.* 457; 6.

Sauss. Mon. Guêpes Sol. Supp. 193. 87. t. 10. f. 5.

Hab. North of Europe.

11. ODYNERUS DEBILITATUS.

Odynerus debilitatus, *Sauss. Mon. Guêpes Sol. Supp.* 194. 88.

Hab. Geneva

12. ODYNERUS FUSCIPES.

B.M.

Odynerus fuscipes, *Herr.-Schæff. Faun. Germ.* 154. 18.

Hab. Germany.

13. ODYNERUS ELEGANS.

Odynerus elegans, *Herr.-Schæff. Faun. Germ.* 154. t. 17.

Sauss. Mon. Guêpes Sol. 125. 4.

Hab. Bavaria.

14. ODYNERUS TRIPHALERATUS.

Odynerus triphaleratus, *Sauss. Mon. Guêpes Sol. Supp.* 200.

Odynerus trifasciatus, *St. Farg. Hym.* ii. 653. 36.

Hab. Europe.

15. ODYNERUS PARIETUM.

B.M

Vespa parietum, *Linn. Faun. Suec.* 1673; *Syst. Nat.* i. 949.

Rossi, Faun. Etrus. ii. 141.

Oliv. Encycl. Méth. vi. 686.

Christ. Hym. 287?

Vespa parietina, *Linn. Faun. Suec.* 1679?

Vespa sexfasciata, *Rossi, Faun. Etrus.* ii. 144.

Schrank, Faun. Boic. ii. 356.

Fabr. Ent. Syst. ii. 268; *Syst. Piez.* 263.

Vespa squamiger, *Fabr. Syst. Piez.* 267. 73.

Vespa sexcincta, *Schrank, Faun. Boic.* ii. 356.

Vespa quadrata, *Panz. Faun. Germ.* 63. 3.

Vespa aucta, *Panz. Faun. Germ.* 81. 17.

Fabr. Ent. Syst. ii. 272; *Syst. Piez.* 267.

Vespa emarginata, *Fabr. Ent. Syst.* ii. 267. 51; *Syst. Piez.* 263. 50?

Vespa trifasciata, *Oliv. Encycl. Méth.* vi. 688.

Vespa æneipennis, *Christ. Hym.* 245. t. 23. f. 3.

Odynerus parietum, *Wesm. Mon. Odyn. Belg.* p. 16, *Supp.* p. 4.

Zett. Ins. Lapp. 455. 1.

St. Farg. Hym. ii. 656.

Sauss. Mon. Guêpes Sol. 130. 10. p. 11. f. 4.

Odynerus affinis, *Herr.-Schæff. Faun. Germ.* 173. 21, & t. 24. var. 1.

Odynerus auctus, *Herr.-Schæff. Faun. Germ.* 173. 22.

Odynerus murarius, *Blanch. Règ. An. Illustr. Ins.* t. 124. f. 3.

Hab. Europe.

16. ODYNERUS OVIVENTRIS.

Odynerus oviventris, *Wesm. Mon. Odyn. Belg. Supp.* 2.

St. Farg. Hym. ii. 651. 35.

Sauss. Mon. Guêpes Sol. 132. 12.

Hab. Belgium, &c.

17. ODYNERUS ANTILOPE.

B.M.

Vespa antilope, *Panz. Faun. Germ.* 53. 9.

Vespa parietina, *Panz. Faun. Germ.* 49. 24.

Fabr. Ent. Syst. ii. 268. 53; *Syst. Piez.* 263. 52.

Odynerus biglumis, *Spin. Ins. Lig.* i. 89. & fasc. iii. 186. 4.

Odynerus Antilope, *Wesm. Mon. Odyn. Belg.* 32.

St. Farg. Hym. ii. 649. 34.

Odynerus mutarius, *Herr.-Schæff. Faun. Germ.* 173. 26. t. 12. 1 ♀.

Hab. Europe.

18. ODYNERUS GAZELLA.

Vespa gazella, *Panz. Faun. Germ.* 53. 10.

Odynerus gazella, *Herr.-Schæff. Faun. Germ.* 173. 27. 176. 4 ♂,
14 ♀.

Hab. Germany.

19. ODYNERUS VIDUUS.

Odynerus viduus, *Herr.-Schæff. Faun. Germ.* 173. 28, 176. 16.

Sauss. Mon. Guêpes Sol. Supp. 210.

Hab. Germany.

20. ODYNERUS PICTUS.

B.M.

Odynerus pictus, *Curtis, Brit. Ent.* iii. 138.

Sauss. Mon. Guêpes Sol. Supp. 210. t. 10. f. 10.

Odynerus constans, *Herr.-Schæff. Faun. Germ.* 173. 29.

Ancistrocerus pictus, *Smith, Cat. Brit. Hym.* 46. 6.

Hab. Britain; Scandinavia.

21. ODYNERUS TRIFASCIATUS.

B.M.

Vespa trifasciata, *Fabr. Syst. Piez.* 264. 60.

Oliv. Encycl. Méth. vi. 688.

Vespa quadricincta, *Fabr. Syst. Piez.* 262. 46.

Vespa yuncea, *Christ. Hym.* 245. t. 23. f. 8.

Odynerus trifasciatus, *Spin. Ins. Lig.* ii. 184.

Wesm. Mon. Odyn. Belg. 7.

Smith, Cat. Brit. Hym. 46. 4.

Sauss. Mon. Guêpes Sol. Supp. 211. 100.

Odynerus tricinctus, *Herr.-Schæff. Faun. Germ.* 173. p. 20. 176.
t. 10 ♀.

Hab. Europe.

22. ODYNERUS TRIMARGINATUS.

B.M.

Odynerus trimarginatus, *Zett. Ins. Lapp.* 456. 4.

Sauss. Mon. Guêpes Sol. Supp. 212. t. 10. f. 9.

Odynerus Scoticus, *Curtis, Brit. Ent.* iii. 138?

Ancistrocerus trimarginatus, *Smith, Cat. Brit. Hym.* 46. 5.

Odynerus 4-cinctus, *Herr.-Schæff. Faun. Germ.* 173. 24, 176. 15.

Hab. North of Europe.

23. ODYNERUS INTERMEDIUS.

Odynerus intermedius, *Sauss. Mon. Guêpes Sol.* 155. 39.

Hab. France; Algeria; Greece.

24. ODYNERUS NIGRIPES.

Odynerus nigripes, *Herr.-Schæff. Faun. Germ.* 176. 17?

Sauss. Mon. Guêpes Sol. 190. 87.

Odynerus maculatus, *St. Farg. Hym.* ii. 626. 14.

Hab. France; Germany.

25. ODYNERUS GRAPHICUS.

B.M

Odynerus graphicus, *Sauss. Mon. Guêpes Sol.* 191. 88.

Hab. France.

26. ODYNERUS DANTICI.

B.M

Vespa Dantici, *Rossi, Faun. Etrus.* ii. 89. t. 6. f. 6.

Odynerus post-scutellatus, *St. Farg. Hym.* ii. 627. 15.

Lucas, Explo. Sc. Algér. Ins. iii. 234. t. 11. f. 8.

Herr.-Schæff. Faun. Germ. 173. 14. t. 23.

Odynerus fastidiosus, *Sauss. Mon. Guêpes Sol.* 189. 85; *Supp.* 236.

Hab. France; Italy.

27. ODYNERUS DUBIUS.

Odynerus dubius, *Sauss. Mon. Guêpes Sol.* 193. 92 (var. *O. parvulus*?).

Hab. France.

28. ODYNERUS SIMPLEX.

B.M.

Vespa simplex, *Fabr. Ent. Syst.* ii. 267. 52; *Syst. Piez.* 263. 51.

Vespa quadrifasciata, *Fabr. Syst. Piez.* 262. 47.

Odynerus trifasciatus, *Spin. Ins. Lig.* ii. 184.

Odynerus 4-fasciatus, *Herr.-Schæff. Faun. Germ.* 173. p. 19. t. 29?

Odynerus Lindenii, *St. Farg. Hym.* ii. 624. 13.

Sauss. Mon. Guêpes Sol. 194. 93.

Hab. Europe.

29. ODYNERUS SESSILIS.

Odynerus sessilis, *Sauss. Mon. Guêpes Sol.* 197. 98.

Hab. Spain.

30. ODYNERUS ROSSII.

B.M.

Odynerus Rossii, *St. Farg. Hym.* ii. 633. 19.*Sauss. Mon. Guêpes Sol.* 207. 111.Odynerus Lindenii, *Mon. Guêpes Sol.* 194.*Hab.* Europe.

31. ODYNERUS FAIRMAIRI.

Odynerus Fairmairi, *Sauss. Mon. Guêpes Sol.* 216. 123.*Hab.* Spain.

32. ODYNERUS VULNERATUS.

Odynerus vulneratus, *Sauss. Mon. Guêpes Sol. Supp.* 248. 122.*Hab.* Spain; Cape of Good Hope.

33. ODYNERUS EGREGIUS.

Odynerus egregius, *Herr.-Schæff. Faun. Germ.* 173. p. 15, 176. t. 2.*Sauss. Mon. Guêpes Sol. Supp.* 262. 141.*Hab.* Spain and Italy.

34. ODYNERUS NOTATUS.

Odynerus notatus, *Jurine, Hym.* t. 9. f. 15.*Sauss. Mon. Guêpes Sol. Supp.* 262. 142.*Hab.* Europe.

35. ODYNERUS GERMANICUS.

Odynerus germanicus, *Sauss. Mon. Guêpes Sol. Supp.* 266. 146.*Hab.* Germany.

36. ODYNERUS MINUTUS.

Vespa minuta, *Fabr. Ent. Syst. Supp.* 262. 65; *Syst. Piez.* 268. 78.Odynerus minutus, *St. Farg. Hym.* ii. 632.*Sauss. Mon. Guêpes Sol.* 207. 110.Odynerus pictus, *Herr.-Schæff. Faun. Germ.* 173. p. 30, 176. t. 3 ♀,
8 d ♂.*Hab.* Europe.

37. ODYNERUS CHEVRIERANUS.

Odynerus Chevrieranus, *Sauss. Mon. Guêpes Sol. Supp.* 268. 148.
t. 13. f. 2.*Hab.* Geneva.

38. ODYNERUS DUFOURIANUS.

Odynerus Dufourianus, *Sauss. Mon. Guêpes Sol. Supp.* 269. 142.
Hab. France.

39. ODYNERUS JURINEI.

Odynerus Jurinei, *Sauss. Mon. Guêpes Sol. Supp.* 270. 150.
Hab. France.

40. ODYNERUS PARISIENSIS.

Odynerus Parisiensis, *Sauss. Mon. Guêpes Sol. Supp.* 271. 151.
t. 13. f. 5.
Hab. Paris.

41. ODYNERUS XANTHOMELAS.

Odynerus xanthomelas, *Herr.-Schæff. Faun. Germ.* 173. p. 29,
176. t. 7 ♀, 8 a ♂.
Sauss. Mon. Guêpes Sol. Supp. 271. 152.
Hab. Germany.

42. ODYNERUS ALPESTRIS.

Odynerus alpestris, *Herr.-Schæff. Faun. Germ.* 173. p. 31, 176.
t. 6 ♀, 8 b ♂.
Sauss. Mon. Guêpes Sol. Supp. 272. 153. t. 13. f. 3.
Hab. Germany.

43. ODYNERUS GALLICUS.

Odynerus Gallicus, *Sauss. Mon. Guêpes Sol. Supp.* 273. 154.
Hab. France (Aix; Provence).

44. ODYNERUS LATIVENTRIS.

Odynerus lativentris, *Sauss. Mon. Guêpes Sol. Supp.* 275. 156.
Hab. France (Montpellier).

45. ODYNERUS ORBITALIS.

Odynerus orbitalis, *Herr.-Schæff. Faun. Germ.* 173. 15.
Sauss. Mon. Guêpes Sol. Supp. 277. 158.
Hab. Austria.

46. ODYNERUS REAUMURII.

Odynerus Reaumurii, *Dufour, Ann. Sc. Nat.* 2nd ser. xi. 90.
Sauss. Mon. Guêpes Sol. 222. 130.
Odynerus Dufourii, *St. Farg. Hym.* ii. 642. 27.
Hab. France.

47. ODYNERUS SPINIPES.

B.M.

Vespa spinipes, *Linn. Faun. Suec.* 1682; *Syst. Nat.* i. 950. 10.
Fabr. Syst. Ent. 368. 28; *Ent. Syst.* ii. 268. 55; *Syst. Piez.*
 263. 54.

Rossi, Faun. Etrus. ii. 86. 868.

Panz. Faun. Germ. 17. 18.

Guêpe solitaire, *Reaum. Ins.* vi. *Mém.* 8. 251. t. 26. f. 2.

Vespa muraria, *Christ. Hym.* 233.

Odynerus spinipes, *Spin. Ins. Lig.* i. 89. 3.

Latr. Hist. Nat. xiii.

Wesm. Mon. Odyn. Belg. 6. 2.

St. Farg. Hym. ii. 608. 2.

Sauss. Mon. Guêpes Sol. 223. 131.

Pterochilus spinipes, *Herr.-Schæff. Faun. Germ.* 173. 16-18.

Hab. Europe.

48. ODYNERUS MELANOCEPHALUS.

B.M.

Vespa melanocephala, *Gmel. Ed. Syst. Nat.* i. 2760. 96 ♀.

Vespa albofasciata, *Rossi, Faun. Etrus.* ii. 143. 870.

Vespa spinipes, *Oliv. Encycl. Méth.* vi. 687. 87 ♂.

Odynerus melanocephalus, *Wesm. Mon. Odyn. Belg.* 12. 3.

Sauss. Mon. Guêpes Sol. 224. 132.

St. Farg. Hym. ii. 610. 3.

Pterochilus dentipes, *Herr.-Schæff. Faun. Germ.* 173. 3 ♀.

Pterochilus tinniens, *Herr.-Schæff. Faun. Germ.* 6. t. 16 ♂.

Oplopus melanocephalus, *Wesm. Odyn. Belg. Supp.* 2. 3.

Hab. Europe.

49. ODYNERUS RENIFORMIS.

B.M.

Vespa reniformis, *Gmel. Ed. Syst. Nat.* i. 2760. 94 ♀.

Vespa melanochra, *Gmel. Ed. Syst. Nat.* i. 2760. 95 ♂?

Odynerus auctus, *Spin. Ins. Lig.* i. 88. 1 & fasc. 3. 185. 1 ♂.

Odynerus reniformis, *Wesm. Mon. Odyn. Belg.* 1.

St. Farg. Hym. ii. 606. 1 (♂ only).

Sauss. Mon. Guêpes Sol. 226. 135. t. 20. f. 1.

Pterochilus coxalis, *Herr.-Schæff. Faun. Germ.* 173. 6. t. 17 ♂.

Hab. France; Belgium.

50. ODYNERUS LÆVIPES.

B.M.

Odynerus lævipis, *Shuck. Loud. Mag. Nat. Hist.* new ser. i. 490.

Sauss. Mon. Guêpes Sol. 228. 137.

Odynerus rubicola, *Dufour, Ann. Sc. Nat.* 2nd ser. xi. 102.

Odynerus reniformis, *St. Farg. Hym.* ii. 606 (♀ only).

Hab. Europe.

51. ODYNERUS BASALIS.

B.M.

Female. Length 5-5½ lines.—Black: the head and thorax strongly punctured; the base of the clypeus, a spot between the antennæ, and an oblong one behind the eyes, yellow; the scape in front and a narrow line at the inner orbit of the eyes, terminating at their emargination, ferruginous. The prothorax anteriorly, a spot beneath the wings, the tegulæ, an interrupted line on the apical margin of the scutellum, and the post-scutellum, yellow; the metathorax truncate, with a ferruginous spot on each side, in the shape of a comma; the legs ferruginous, with the coxæ and trochanters ferruginous; the wings hyaline, the anterior margin of the superior pair yellowish, the nervures ferruginous at the base and brown towards the apex of the wings. Abdomen closely and finely punctured; the basal segment ferruginous; the apical margin of the segments with a yellow band, that on the second and two following segments widened laterally; a black subtriangular spot in the middle of the basal segment above; beneath, the second segment with a narrow yellow band on its apical margin, and having on each side, as well as the two following segments, an angular yellow spot.

Hab. Polish Ukraine.

DIV. II.—*Species of Asia.*

52. ODYNERUS IONIUS.

Odynerus Ioniuss, *Sauss. Mon. Guêpes Sol. Supp.* 263. 143.

Hab. Rhodes.

53. ODYNERUS BOHEMANI.

Odynerus Bohemani, *Sauss. Mon. Guêpes Sol. Supp.* 264. 144.
t. 12. f. 6.

Hab. Rhodes; Ionian Islands.

54. ODYNERUS RHODENSIS.

Odynerus Rhodensis, *Sauss. Mon. Guêpes Sol. Supp.* 208. 96.
t. 10. f. 7, 7 a ♀.

Hab. Rhodes.

55. ODYNERUS SICHELII.

Odynerus Sichelii, *Sauss. Mon. Guêpes Sol. Supp.* 206. t. 10. f. 6.
Hab. India.

56. ODYNERUS PUNCTUM.

B.M.

Odynerus punctum, Sauss. Mon. Guêpes Sol. 209. 114. t. 19. f. 2.*Hab.* India.

57. ODYNERUS PUNCTATIPENNIS.

B.M.

Odynerus punctatipennis, Sauss. Mon. Guêpes Sol. 210. 115.*Hab.* India.

58. ODYNERUS OVALIS.

B.M.

Odynerus ovalis, Sauss. Mon. Guêpes Sol. 215. 122. t. 19. f. 4.*Hab.* India; China.

59. ODYNERUS DIFFINIS.

Odynerus diffinis, Sauss. Mon. Guêpes Sol. Supp. 274. 155. t. 14. f. 2 ♀.*Hab.* India.

60. ODYNERUS INTRICATUS.

B.M.

Male. Length $4\frac{1}{2}$ –5 lines.—Ferruginous: the head and thorax rugose; the clypeus deeply emarginate at the apex; the mandibles, clypeus and a spot above it, yellow; the apex of the mandibles ferruginous, their teeth black; a crown-shaped spot on the vertex, enclosing the stemmata; the prothorax in the middle anteriorly, and the tibiae and basal joint of the tarsi, yellow outside; the wings fusco-hyaline, the superior pair with a darker cloud along the anterior margin, occupying and terminating at the marginal cell; the metathorax rounded, the post-scutellum bituberculate. Abdomen punctured, the punctures rather distant and slightly impressed on the disk of the first and second segments; on their margins and on the following segments the punctures are stronger; a band on the apical margin of the first segment, the sides and apical margin of the second segment, and the whole of the following segments, yellow; the inner border of the yellow margin at the sides of the second segment semicircular, and the inner border of the apical margin traversed by a black stain; beneath, the second segment with a black spot on each side, its apical margin bordered with yellow, which is produced in the middle into a quadrate shape; the third segment with a black spot on each side.

Hab. Bombay. (Coll. F. Smith.)

This species is probably the male of *O. punctatipennis*; if not, it is closely allied to it.

61. ODYNERUS FLAVO-LINEATUS.

B.M.

Female. Length 6 lines.—Black: the clypeus and a spot above it, a spot in the emargination of the eyes and an abbreviated line behind, with the scape in front, yellow; the apex of the flagellum fulvous beneath; the head and thorax closely punctured. The prothorax anteriorly, a spot beneath the wings, the tegulæ and a spot behind them, two abbreviated lines on the mesothorax touching the base of the scutellum, the post-scutellum, and a large subovate spot on each side of the metathorax, yellow; a fuscous spot in the middle of the tegulæ; a spot on the intermediate and posterior coxæ, a broad stripe on the femora in front, not extending to their base, the tibiæ outside, and the claw-joint of the anterior tarsi, yellow; the claw-joint of the intermediate and posterior tarsi rufo-testaceous; wings subhyaline, the anterior and apical margins of the superior pair fuscous. Abdomen closely and finely punctured, the apex nearly glabrous; the apical margins of the segments with a narrow yellow band; beneath closely punctured; the apical margins of the segments narrowly and obsoletely banded with testaceous yellow.

Hab. Java.

62. ODYNERUS CONFLUENTUS.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head, thorax and abdomen covered with confluent punctures, which are elongate, and on the abdomen have a tendency to run into striæ. The scape in front, the clypeus and a spot above it, the emargination of the eyes and a broad stripe behind them, yellow; the flagellum beneath and the mandibles ferruginous. The prothorax in front, the mesothorax beneath the wings, two abbreviated lines on the disk of the mesothorax, the tegulæ, two ovate spots on the scutellum, the post-scutellum and the metathorax, yellow; the latter with a black stripe down the centre; the apical lateral angles of the metathorax acute; the legs yellow, the femora behind, the tips of the posterior tibiæ within and of the joints of the tarsi slightly ferruginous; the wings subhyaline, the costal cell and the apex of the anterior wings fuscous. Abdomen: the apical and lateral margins of the basal segment, a narrow band a little before the apical margins of the second and three following segments, yellow; beneath, the first and second segments yellow, the second with a narrow central black stripe; an interrupted yellow fascia on the apical margins of the three following segments.

Hab. Sumatra.

63. ODYNERUS RUFESCENS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: head and thorax strongly and closely punctured; the clypeus, labrum, scape in front and the face, reddish-yellow; a large black spot above each antenna and descending to the base of the clypeus; the antennæ and mandibles ferruginous, yellowish at their base; a broad orange stripe behind the eyes. The prothorax above, a spot beneath the wings, two longitudinal stripes on the mesothorax, the tegulæ, scutellum, post-scutellum, metathorax and legs, reddish-yellow; the tibiæ and femora paler outside, the margins of the scutellum and post-scutellum black; the metathorax truncate, rugose, and with a central longitudinal carina, the lateral margins of the truncation crenate; the wings fulvo-hyaline, with a fuscous cloud in the marginal cell. Abdomen: the first segment and the base of the second ferruginous; the apical margin of the first segment with a narrow yellow fascia, widest in the middle; the second and following segments with broad fasciæ, that on the second widest in the middle; beneath, ferruginous, a yellow fascia on the second segment, its anterior margin notched in the middle and emarginate on each side.

Hab. Ceram. (Coll. Madame Ida Pfeiffer.)

64. ODYNERUS FRAGILIS.

B.M.

Male. Length $3\frac{1}{2}$ lines.—Black: the head, thorax and abdomen coarsely punctured; the clypeus and a spot above it, the scape in front, a spot in the emargination of the eyes, another behind them, and the mandibles, yellow; the tips of the latter ferruginous, with their teeth black; a black spot on the clypeus; the flagellum fulvous beneath. The thorax truncate in front, a large spot on each side of the anterior margin of the prothorax, a spot beneath the wings, the hinder margin of the tegulæ, a subinterrupted transverse line on the scutellum and a large ovate spot on each side of the metathorax, yellow; the apex of the anterior and intermediate femora in front, the tibiæ outside, and the anterior tarsi, yellow, the latter with ferruginous stains; the intermediate and posterior tarsi dusky. Abdomen subpetiolate; the basal segment very narrow, about half the width of the second, which has an ovate yellow spot on each side at its base; the apical margins of the first and second segments, and a transverse spot on the apical margins of the fifth and sixth segments, yellow; the second segment with a yellow band on its apical margin, its anterior edge waved.

Hab. Borneo.

65. ODYNERUS ATERRIMUS.

Odynerus aterrimus, *Sauss. Mon. Guêpes Sol.* 128. 7.

Hab. China.

66. ODYNERUS DYSCHERUS.

Odynerus dyscherus, *Sauss. Mon. Guêpes Sol.* 175. 66.

Hab. China.

67. ODYNERUS TRUNCATUS.

Odynerus truncatus, *Sauss. Mon. Guêpes Sol.* 175. 66.

Hab. China.

68. ODYNERUS NIGRIFRONS.

B.M.

Female. Length 8 lines.—Black: the head and thorax covered with coarse confluent punctures; the clypeus very convex, rugose and slightly notched at the apex; the scape yellow in front. The prothorax with two minute yellow spots on its anterior margin; the truncation of the metathorax slightly concave and sculptured with curved transverse striæ; the tegulæ, the femora towards their apex and the claws ferruginous; wings smoky-hyaline, with a beautiful violet iridescence. Abdomen closely punctured, coarsely so towards the apex; the two basal segments with a narrow interrupted yellow fascia on their apical margins.

Hab. North China (Shanghai).

DIV. III.—*Species of Australia and Tasmania.*

69. ODYNERUS FLUVIALIS.

Odynerus fluvialis, *Sauss. Mon. Guêpes Sol. Supp.* 215. 106.

Hab. Australia.

70. ODYNERUS CRUENTUS.

Odynerus cruentus, *Sauss. Mon. Guêpes Sol. Supp.* 221. 115.

Hab. New Holland.

71. ODYNERUS SANGUINOLENTUS.

B.M.

Odynerus sanguinolentus, *Sauss. Mon. Guêpes Sol. Supp.* 221. 116.

Hab. New Holland.

72. ODYNERUS SUBALARIS.

Odynerus subalaris, *Sauss. Mon. Guêpes Sol. Supp.* 280. 162.
t. 14. f. 5.

Hab. New Holland.

73. ODYNERUS SUCCINCTUS.

Odynerus succinctus, *Sauss. Mon. Guêpes Sol.* 204. 107.

Hab. New Holland ; Tasmania.

74. ODYNERUS CALEDONICUS.

Odynerus Caledonicus, *Sauss. Mon. Guêpes Sol.* 205. 108.

Hab. New Caledonia.

75. ODYNERUS NEGLECTUS.

B.M.

Odynerus neglectus, *Sauss. Mon. Guêpes Sol. Supp.* 245. 118.

Hab. New Holland.

76. ODYNERUS BICINCTUS.

Vespa bicincta, *Fabr. Ent. Syst.* ii. 271. 65 ; *Syst. Piez.* 265.

St. Farg. Hym. ii. 644.

Sauss. Mon. Guêpes Sol. Supp. 224.

Odynerus bizonatus, *Boisd. Voy. de l'Astrol. Entom.* 459 ♂.

Sauss. Mon. Guêpes Sol. 156. 40.

Hab. New Holland ; Isles of the Pacific ; Cape of Good Hope.

77. ODYNERUS SAUCIUS.

Odynerus saucius, *Sauss. Mon. Guêpes Sol. Supp.* 280. 163.

Hab. New Holland.

78. ODYNERUS BICOLORATUS.

B.M.

Odynerus bicoloratus, *Sauss. Mon. Guêpes Sol. Supp.* 281. 164.

Hab. New Holland. (Coll. J. S. Baly, Esq.)

79. ODYNERUS ALARIFORMIS.

Odynerus alariformis, *Sauss. Mon. Guêpes Sol. Supp.* 282. 165.

t. 14. f. 6.

Hab. New Holland.

80. ODYNERUS FLAMMIGER.

Odynerus flammiger, *Sauss. Mon. Guêpes Sol. Supp.* 282. 166.

Hab. New South Wales.

81. ODYNERUS BALYI.

Odynerus Balyi, *Sauss. Mon. Guêpes Sol. Supp.* 283. 167. t. 14. f. 6.

Hab. New Holland.

82. ODYNERUS ANGULATUS.

B.M.

Odynerus angulatus, *Sauss. Mon. Guêpes Sol. Supp.* 284. 168.
t. 14. f. 7.

Hab. New Holland.

83. ODYNERUS BICOLOR.

B.M.

Odynerus bicolor, *Sauss. Mon. Guêpes Sol. Supp.* 284. 169.

Hab. New Holland (Macintyre River).

84. ODYNERUS TRIANGULUM.

Odynerus triangulum, *Sauss. Mon. Guêpes Sol. Supp.* 285. 170.
t. 14. f. 8.

Hab. Australia.

85. ODYNERUS METATHORACICUS.

Odynerus metathoracicus, *Sauss. Mon. Guêpes Sol. Supp.* 286. 171.

Hab. New Holland.

86. ODYNERUS PUSILLUS.

Odynerus pusillus, *Sauss. Mon. Guêpes Sol. Supp.* 287. 172.

Hab. New Holland.

87. ODYNERUS FLAVO-CINCTUS.

B.M.

Male. Length 4 lines.—Black: the head and thorax roughly punctured; a minute spot behind the eyes, another between the antennæ and the clypeus, yellow; the clypeus deeply emarginate anteriorly, the angles spinose. Thorax: the prothorax anteriorly, a spot beneath the wings, another on each side of the scutellum, yellow; the metathorax concavely truncate, a minute tooth on each side in the middle of the margin of the truncation, the tooth yellow; the wings hyaline, the anterior margin of the superior pair fuscous; the knees, tibiæ and tarsi ferruginous. Abdomen shining; the first segment much narrower than the second and with a longitudinal impressed line above; the apical margins of the first and second segments with narrow yellow bands which are slightly notched in the middle; the second is continuous beneath, notched in the middle and emarginate on each side; the third and following segments have their apical margins obscurely ferruginous; the first segment and the base of the second with a bright silky pubescence.

Hab. New Holland.

This is probably the male of *O. emarginatus*, the species having the clypeus deeply emarginate and spined at the angles.

88. ODYNERUS ALASTORIPENNIS.

Odynerus Alastoripennis, *Sauss. Mon. Guêpes Sol.* 147. 34.
t. 16. f. 5.

Hab. Tasmania.

89. ODYNERUS VERNALIS.

Odynerus vernalis, *Sauss. Mon. Guêpes Sol.* 148. 35 ♀.

Hab. Tasmania.

90. ODYNERUS EXTRANEUS.

Odynerus exilis, *Sauss. Mon. Guêpes Sol.* 157. 41. t. 17. f. 2.

Odynerus extraneus, *Sauss. Mon. Guêpes Sol. Supp.* 224.

Hab. Tasmania.

91. ODYNERUS CLYPEATUS.

Odynerus clypeatus, *Sauss. Mon. Guêpes Sol.* 200. 101. t. 18. f. 6.

Hab. Tasmania.

92. ODYNERUS NIGROCINCTUS.

Odynerus nigrocinctus, *Sauss. Mon. Guêpes Sol.* 201. 102.

Hab. Tasmania.

93. ODYNERUS DIEMENSIS.

B.M.

Odynerus Diemensis, *Sauss. Mon. Guêpes Sol.* 201. 103 ♀.

Hab. Tasmania.

94. ODYNERUS CONCOLOR.

Odynerus concolor, *Sauss. Mon. Guêpes Sol.* 202. 104. t. 18. f. 7.

Hab. Tasmania.

95. ODYNERUS TAMARINUS.

B.M.

Odynerus Tamarinus, *Sauss. Mon. Guêpes Sol.* 203. 105. |

Hab. Tasmania.

96. ODYNERUS ALARIS.

Odynerus alaris, *Sauss. Mon. Guêpes Sol.* 203. 106. t. 18. f. 5.

Hab. Tasmania.

97. ODYNERUS TASMANIENSIS.

B.M.

Odynerus Tasmaniensis, *Sauss. Mon. Guêpes Sol.* 199. t. 18. f. 4.

Hab. Tasmania.

DIV. IV.—*Species of Africa (Madagascar).*

98. ODYNERUS TRILOBUS.

B.M.

Vespa triloba, *Fabr. Mant. Ins.* i. 290. 41; *Ent. Syst.* ii. 268. 54;
Syst. Piez. 263. 53.

Oliv. Encycl. Méth. vi. 687. 86.

Odynerus trilobus, *St. Farg. Hym.* ii. 635. 20.

Sauss. Mon. Guêpes Sol. 186. 82.

Hab. Isle of France; Madagascar.

99. ODYNERUS MELANUS.

Odynerus melanus, *Sauss. Mon. Guêpes Sol.* 159. 44. t. 18. f. 9.

Hab. Madagascar.

100. ODYNERUS RENIMACULA.

Odynerus renimacula, *St. Farg. Hym.* ii. 654. 37.

Lucas, Explo. Sc. Algér. iii. 238.

Sauss. Mon. Guêpes Sol. 128. 8.

Savigny, Descr. Égypt. Hym. t. 9. f. 2 ♂.

Hab. Algeria.

101. ODYNERUS ATROPOS.

Odynerus Atropos, *St. Farg. Hym.* ii. 661. 41.

Lucas, Explo. Sc. Algér. iii. 240.

Sauss. Mon. Guêpes Sol. 134. 15.

Hab. Algeria; Egypt.

102. ODYNERUS LONGISPINOSUS.

Odynerus longispinosus, *Sauss. Mon. Guêpes Sol. Supp.* 213.

Hab. Algeria.

103. ODYNERUS MACTA.

Odynerus Macta, *St. Farg. Hym.* ii. 639. 24.

Lucas, Explo. Sc. Algér. iii. 236.

Sauss. Mon. Guêpes Sol. 159. 43. t. 11. f. 7.

Hab. Algeria.

104. ODYNERUS FASTIDIOSUS.

Odynerus fastidiosus, *Sauss. Mon. Guêpes Sol.* 189. 85 ♀.

Hab. Algeria.

105. ODYNERUS INNUMERABILIS.

Odynerus innumerabilis, *Sauss. Mon. Guêpes Sol.* 189. 86, & *Supp.* 233 (*O. posticus*, *Herr.-Schæff.*?).

Hab. Algeria.

106. ODYNERUS CRENATUS.

B.M.

Odynerus crenatus, *St. Farg. Hym.* ii. 629. 16.

Lucas, Explo. Sc. Algér. Ins. iii. 235.

Sauss. Mon. Guêpes Sol. 191. 89. t. 12. f. 5.

Vespa aucta, *Fabr. Syst. Piez.* 267. 74?

Hab. Algeria.

107. ODYNERUS PARVULUS.

Pterochilus lætus, *Herr.-Schæff. Faun. Germ.* 173. 8. t. 23 ♂.

Odynerus parvulus, *St. Farg. Hym.* ii. 631. 17.

Lucas, Explo. Sc. Algér. Ins. iii. 236. t. 11. f. 9.

Sauss. Mon. Guêpes Sol. 193. 91.

Odynerus Amadensis, *Sauss. Mon. Guêpes Sol. Supp.* 214. 105. var., & *Supp.* 279. t. 12. f. 9.

Hab. Algeria.

108. ODYNERUS FILIPALPIS.

Odynerus filipalpis, *Sauss. Mon. Guêpes Sol.* 197. 97 ♀.

(*Savigny*), *Descr. Egypt. Hym.* t. 9. f. 12.

Hab. Algeria.

109. ODYNERUS TRIPUNCTATUS.

B.M.

Vespa tripunctata, *Fabr. Mant.* i. 290. 47; *Ent. Syst.* ii. 270. 63; *Syst. Piez.* 264. 62.

Oliv. Encycl. Méth. vi. 688. 93.

Odynerus tripunctatus, *Sauss. Mon. Guêpes Sol.* 196. 96.

Descr. Egypt. (Savigny) Hym. t. 9. f. 11.

Hab. Algeria; Egypt.

110. ODYNERUS FLORICOLA.

Odynerus floricola, *Sauss. Mon. Guêpes Sol.* 196. 95. t. 18. f. 3, & *Supp.* 239. 196.

Hab. Algeria.

111. ODYNERUS EMORTUALIS.

Odynerus emortualis, *Sauss. Mon. Guêpes Sol.* 230. 139. t. 19. f. 9.

Hab. Algeria?

112. ODYNERUS BISPINOSUS.

Odynerus bispinosus, *St. Farg. Hym.* ii. 622. 11.
Lucas, Explo. Sc. Algér. iii. 232. t. 11. f. 6.
Sauss. Mon. Guêpes Sol. 206. 109.

Hab. Algeria.

113. ODYNERUS BIVITTATUS.

Odynerus bivittatus, *St. Farg. Hym.* ii. 617. 8.
Sauss. Mon. Guêpes Sol. 211. 117. t. 19. f. 3.

Hab. Algeria.

114. ODYNERUS LUTEOLUS.

Vespa labiata, *Fabr. Ent. Syst. Supp.* 260. 18? *Syst. Piez.* 257. 18?
Odynerus luteolus, *St. Farg. Hym.* ii. 616. 7.
Lucas, Explo. Sc. Algér. iii. 231. t. 11. f. 4.
Sauss. Mon. Guêpes Sol. 216. 123, & *Supp.* 245.

Hab. Algeria (Oran).

115. ODYNERUS REGULUS.

Odynerus regulus, *Sauss. Mon. Guêpes Sol. Supp.* 247. 121. t. 11.
f. 5 ♂.

Hab. Algeria.

116. ODYNERUS FASTIDIOSISSIMUS.

Odynerus fastidiosissimus, *Sauss. Mon. Guêpes Sol. Supp.* 265.
145. t. 12. f. 7.

Hab. Algeria.

117. ODYNERUS BLANCHARDIANUS.

Odynerus Blanchardianus, *Sauss. Mon. Guêpes Sol. Supp.* 276.
157. t. 13. f. 8.

Hab. Algeria.

118. ODYNERUS DOURSII.

Odynerus Doursii, *Sauss. Mon. Guêpes Sol. Supp.* 278. 160.

Hab. Algeria.

119. ODYNERUS PONTEBÆ.

Odynerus Pontebæ, *Sauss. Mon. Guêpes Sol. Supp.* 279. 161.

Hab. Algeria (Ponteba).

120. ODYNERUS NOTULA.

B.M.

Odynerus notula, *St. Farg. Hym.* ii. 612. 4.*Lucas, Explo. Sc. Algér.* iii. 229. t. 11. f. 2.*Sauss. Mon. Guêpes Sol.* 219. 126.*Hab.* Algeria.

121. ODYNERUS VARIOLOSUS.

Odynerus variolosus, *St. Farg. Hym.* ii. 613. 5.*Lucas, Explo. Sc. Algér.* iii. 235.*Sauss. Mon. Guêpes Sol.* 220. 127.*Hab.* Algeria.

122. ODYNERUS ROTUNDIGASTER.

Odynerus rotundigaster, *Sauss. Mon. Guêpes Sol.* 221. 128. t. 19. f. 8.*Hab.* Algeria.

123. ODYNERUS RUFIDULUS.

Odynerus rufidulus, *St. Farg. Hym.* ii. 641. 26.*Lucas, Explo. Sc. Algér.* iii. t. 11. f. 11.*Sauss. Mon. Guêpes Sol.* 222. 129.*Hab.* Algeria.

124. ODYNERUS VARIEGATUS.

Vespa variegata, *Fabr. Ent. Syst.* ii. 269. 59.*Odynerus flavus*, *St. Farg. Hym.* ii. 615. 6.*Lucas, Explo. Sc. Algér.* iii. 230. t. 11. f. 3.*Odynerus variegatus*, *Sauss. Mon. Guêpes Sol.* 229. 138.*Hab.* Algeria.

125. ODYNERUS BIDENTATUS.

Odynerus bidentatus, *St. Farg. Hym.* ii. 623. 12.*Lucas, Explo. Sc. Algér.* iii. 233. t. 11. f. 7.*Sauss. Mon. Guêpes Sol.* 188. 84. t. 18. f. 1.*Hab.* Algeria (Oran).

126. ODYNERUS IMPUNCTATUS.

Odynerus impunctatus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 502.*Descr. Egypt. (Savigny) Hym.* t. 9. f. 5.*Hab.* Egypt.

127. ODYNERUS CHLOROTICUS.

B.M.

Odynerus chloroticus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 500.

Odynerus testaceus, *Sauss. Mon. Guêpes Sol.* 195. 94.

Descr. Egypt. (Savigny) Hym. t. 10. f. 1.

Hab. Egypt.

128. ODYNERUS BIPHALERATUS.

Odynerus biphaleratus, *Sauss. Mon. Guêpes Sol.* 134. 14. t. 16. f. 2.

Descr. Egypt. (Savigny) Hym. t. 9. f. 6 ♀.

Hab. Egypt.

129. ODYNERUS CANALICULATUS.

Odynerus canaliculatus, *Sauss. Mon. Guêpes Sol. Supp.* 260. 138. t. 14. f. 4, 4 a.

Hab. Arabia.

130. ODYNERUS DIMIDIATUS.

Odynerus dimidiatus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 502.

Hab. Egypt.

131. ODYNERUS SAVIGNYI.

Odynerus Savignyi, *Sauss. Mon. Guêpes Sol.* 226. 134.

Hab. Arabia (Djidda).

132. ODYNERUS ALEXANDRINUS.

Odynerus Alexandrinus, *Sauss. Mon. Guêpes Sol.* 225. 133.

Hab. Egypt.

133. ODYNERUS QUADRI-TUBERCULATUS.

B.M.

Male. Length 4 lines.—Black: the clypeus notched at the apex; the head and thorax coarsely punctured; the clypeus and a spot above it, a spot in the emargination of the eyes and another behind them, pale testaceous; a transverse ferruginous band on the clypeus, the mandibles, the flagellum beneath, and its two basal segments, ferruginous. The prothorax, a spot beneath the wings, the tegulæ, two minute spots on the scutellum and post-scutellum, the sides of the metathorax and the legs, ferruginous; the tibiæ outside and the basal joint of the tarsi white; a pale testaceous spot in the middle of the anterior margin of the prothorax, and another on the tegulæ in front; the wings subhyaline, the anterior and apical margins of the superior pair dark fuscous; the scutellum and post-scutellum subdentate on each side

laterally. The first and second segments of the abdomen ferruginous at the sides; all the segments with a white fascia on their apical margins; beneath, the second segment ferruginous, with a white fascia on its apical margin, the inner edge of which is waved.

Hab. Port Natal.

This species is allied to *Odynerus vulneratus* of Saussure.

134. ODYNERUS EUMENOIDES.

B.M.

Male. Length 3 lines.—Black: the abdomen subpetiolate, the first segment campanulate and much narrower than the second; the clypeus narrowed and bidentate at the apex; a transverse line at its base and a narrow line on the scape in front, yellow. The prothorax truncate, the metathorax rounded; the former with a line in front, a spot on the tegulæ behind, the post-scutellum, tibiæ and tarsi, yellow; the anterior legs wanting; the apical joints of the tarsi ferruginous; the wings hyaline, their apical margins clouded, as well as the apex of the externo-medial cell. The first and second segments of the abdomen with a yellow fascia on their apical margins; one or two of the following segments with a yellow spot in the middle of their apical margins.

Hab. Port Natal.

135. ODYNERUS CAPENSIS.

Odynerus Capensis, *Sauss. Mon. Guêpes Sol. Supp.* 214. 104.

Hab. Cape of Good Hope.

136. ODYNERUS RHYNCHIFORMIS.

Odynerus rhynchiformis, *Sauss. Mon. Guêpes Sol.* 174. 65. t. 17. f. 12.

Hab. Cape of Good Hope.

137. ODYNERUS SILAENSIS.

Odynerus Silaos, *Sauss. Mon. Guêpes Sol.* 213. 119, & *Supp.* 244. t. 19. f. 6.

Hab. Isle of Bourbon; Cape of Good Hope.

138. ODYNERUS HOTTENTOTTUS.

Odynerus posticus, *Sauss. Mon. Guêpes Sol.* 214. 120, & *Supp.* 244.

Hab. Cape of Good Hope.

139. ODYNERUS NATALENSIS.

Odynerus Natalensis, *Sauss. Mon. Guêpes Sol. Supp.* 261. 140.

Hab. Cape of Good Hope (Port Natal).

140. ODYNERUS IMBECILIS.

Odynerus imbecilis, *Sauss. Mon. Guêpes Sol.* 126. 5 ♂.

Hab. Sierra Leone.

141. ODYNERUS ÆTHIOPICUS.

Odynerus Æthiopicus, *Sauss. Mon. Guêpes Sol. Supp.* t. 13. f. 8.

Hab. Sierra Leone.

142. ODYNERUS BISUTURALIS.

Odynerus bisuturalis, *Sauss. Mon. Guêpes Sol.* 127. 6.

Hab. Senegal.

143. ODYNERUS DIFFORMIS.

Odynerus difformis, *Sauss. Mon. Guêpes Sol.* 145. 31. t. 16. f. 11.

Descr. Egypt. (Savigny) Ins. Hym. t. 8. f. 11.

Hab. Senegal.

144. ODYNERUS RHYNCHOIDES.

Odynerus rhynchoides, *Sauss. Mon. Guêpes Sol.* 174. 64. t. 7. f. 12.

Hab. Senegal.

145. ODYNERUS SYNAGROIDES.

Odynerus Synagroides, *Sauss. Mon. Guêpes Sol.* 198. 99. t. 18. f. 2 ♀.

Hab. Senegal.

146. ODYNERUS MULTICOLOR.

Odynerus multicolor, *Sauss. Mon. Guêpes Sol.* 209. 113. t. 18. f. 11.

Hab. Senegal.

147. ODYNERUS BELLATUS.

B.M.

Odynerus bellatus, *Sauss. Mon. Guêpes Sol.* 210. 116. t. 18. f. 10.

Descr. Egypt. (Savigny) Hym. t. 9. f. 14.

Hab. Senegal; Egypt.

148. ODYNERUS TROGLODYTES.

Odynerus troglodytes, *Sauss. Mon. Guêpes Sol. Supp.* 249. 128.

Hab. Senegal.

149. ODYNERUS MINIATUS.

Odynerus miniatus, *Sauss. Mon. Guêpes Sol. Supp.* 249. 124.
t. 11. f. 6 ♀.

Hab. Senegal.

150. ODYNERUS SENEGALENSIS.

Odynerus Senegalensis, *Sauss. Mon. Guêpes Sol.* 219. 125. t. 19. f. 7.

Hab. Senegal.

151. ODYNERUS COMBUSTUS.

Male. Length 5 lines.—Ferruginous, variegated with yellow spots and bands: the clypeus narrowed in front and bidentate at the apex; the outer orbit of the eyes, the inner orbits as high as their emargination, the base of the mandibles, the clypeus, and a spot above it and the scape in front, yellow; the flagellum slightly fuscous above towards the apex. Thorax: the prothorax in front, a spot beneath the wings, the tegulæ, a line on each side of the scutellum, the post-scutellum, the sides of the metathorax, the coxæ in front, the tips of the femora and the tibiæ in front, yellow; the wings hyaline, with a fuscous stain along the anterior margin of the superior pair. Abdomen: the first, second and third segments with a yellow fascia on their apical margins, the second and third continued beneath; the entire insect closely and rather strongly punctured.

Hab. Africa (the Gambia). (Coll. F. Smith.)

In colouring, this species resembles *O. mutans*, but in that species the abdomen is smooth, and its first segment produced in the middle of its apical margin above into an angular shape, which is not the case in the present species.

152. ODYNERUS INSTABILIS.

Female. Length 4 lines.—Black: the metathorax red; the scape in front, the base and apex of the clypeus, the mandibles, a transverse line on the forehead entering the emargination of the eyes, a line on their inner orbit, and also an elongate spot behind them, yellow; the scape above and the flagellum, fulvous, the latter slightly fuscous above towards the apex; the mandibles usually more or less ferruginous. The prothorax anteriorly, a spot beneath the wings, the tegulæ, scutellum and legs, yellow; the coxæ and tarsi slightly ferruginous; the wings hyaline, with the anterior margin of the superior pair fuscous; the metathorax truncate and slightly concave. The first and second segments of the abdomen with a broad yellow fascia on their posterior margins,

which are widened at the sides; the third segment with a narrower fascia and the following of a reddish yellow.

Male.—Frequently very highly coloured, the yellow markings being of a bright sulphur-yellow, and the clypeus notched at the apex; the thorax ferruginous, the mesothorax stained with black at its basal and apical margins; the abdomen ferruginous, with a black stain on the second and third segments above; the colour variable, the thorax being sometimes black above.

Hab. Africa (Gambia). (Coll. F. Smith.)

153. *ODYNERUS TROPICALIS.*

Odynerus tropicalis, *Sauss. Mon. Guêpes Sol.* 214. 121. t. 19. f. 5.

Hab. Abyssinia.

154. *ODYNERUS FERVIDUS.*

Odynerus fervidus, *Sauss. Mon. Guêpes Sol. Supp.* 288. 174.

Hab. Africa.

155. *ODYNERUS GUERINII.*

Odynerus Guerinii, *Sauss. Mon. Guêpes Sol.* 176. 68 ♂.

Hab. Africa.

156. *ODYNERUS TECTUS.*

Vespa tectus, *Fabr. Spec. Ins.* i. 466. 48; *Ent. Syst.* ii. 274; *Syst. Piez.* 261. 40.

Oliv. Encycl. Méth. vi. 690. 107.

Odynerus tectus, *Sauss. Mon. Guêpes Sol. Supp.* 258. 135.

Hab. Africa.

157. *ODYNERUS SIGNATUS.*

B.M.

Odynerus signatus, *Sauss. Mon. Guêpes Sol. Supp.* 258. 136.

Hab. Africa.

158. *ODYNERUS CARINULATUS.*

Odynerus carinulatus, *Sauss. Mon. Guêpes Sol. Supp.* 259. 137. t. 14. f. 3, 3 a.

Hab. Africa.

159. *ODYNERUS MADÆRA.*

Odynerus Madæra, *Sauss. Mon. Guêpes Sol.* 150. 38.

Hab. Madeira.

160. ODYNERUS OCHLERUS.

B.M.

Odynerus ochlerus, *Sauss. Mon. Guêpes Sol.* 131. 11.
Savigny, Descr. Egypt. Hym. t. 9. f. 2?

Hab. Madeira.

161. ODYNERUS HÆMATODES.

Odynerus hæmatodes, *Brullé, Hist. Nat. Il. Canar.* 89. t. 3. f. 14.
Sauss. Mon. Guêpes Sol. 149. 36.

Hab. Canary Islands.

162. ODYNERUS RUBROPICTUS.

Odynerus hæmatodes (var.), *Brullé, Hist. Nat. Il. Canar. Ins.* 98 ♀.
Odynerus rubropictus, *Sauss. Mon. Guêpes Sol.* 150. 37.

Hab. Canary Islands.

163. ODYNERUS REFLEXUS.

Odynerus reflexus, *Brullé, Hist. Nat. Il. Canar.* 89.
Sauss. Mon. Guêpes Sol. 187. 83.

Hab. Canary Islands.

DIV. V.—*Species of South America (Chili, Peru, Brazil,*
Columbia, &c.).

164. ODYNERUS AMBIGUUS.

Odynerus ambiguus, *Spin. Faun. Chili, Zool.* vi. 264. 9.
Sauss. Mon. Guêpes Sol. 140. 23. t. 6. f. 4.

Hab. Chili.

165. ODYNERUS SCABRIUSCULUS.

Odynerus scabriusculus, *Spin. Faun. Chili, Zool.* vi. 262. 8.
Sauss. Mon. Guêpes Sol. 140. 24. t. 11. f. 1.

Hab. Chili.

166. ODYNERUS BUSTILLOSI.

Odynerus Bustillos, *Sauss. Mon. Guêpes Sol.* 141. 25 ♂; *Supp.*
 205. 141.

Odynerus bustillosi, *Sauss. Faun. Chili, Zool. vi. Supp.* 567. 10.

Hab. Chili.

167. ODYNERUS EXCIPIENDUS.

Eumenes excipienda, *Spin. Faun. Chili*, vi. 266. 1.

Odynerus excipiens, *Sauss. Mon. Guêpes Sol.* 161. 47.

Odynerus colocolo, *Sauss. Mon. Guêpes Sol.* 161. 46, & *Supp.* 227. t. 17. f. 4.

Hab. Chili.

168. ODYNERUS SUBPETIOLATUS.

Odynerus subpetiolatus, *Sauss. Mon. Guêpes Sol.* 162. 48.

Odynerus coarctatus, *Sauss. Faun. Chili*, vi. *Supp.* 565. 7.

Hab. Chili.

169. ODYNERUS TUBERCULIVENTRIS.

Eumenes tuberculiventris, *Spin. Faun. Chili*, vi. 267. 2.

Odynerus tuberculiventris, *Sauss. Mon. Guêpes Sol.* 162. 49.

Hab. Chili (Coquimbo, Tucapel).

170. ODYNERUS TUBERCULATUS.

Odynerus tuberculatus, *Sauss. Mon. Guêpes Sol.* 163. 50.

Sauss. Faun. Chili, Zool. vi. *Supp.* 564. 6.

Hab. Chili.

171. ODYNERUS LABIATUS.

Odynerus labiatus, *Halid. Trans. Linn. Soc.* xvii. 323.

Odynerus Lachesis, *St. Farg. Hym.* ii. 667. 44.

Sauss. Mon. Guêpes Sol. 167. 51, & *Supp.* 228. t. 17. f. 5.

Odynerus marginicollis, *Spin. Faun. Chili*, vi. 256.

Hab. Chili.

172. ODYNERUS OBSCURIPENNIS.

Odynerus obscuripennis, *Spin. Faun. Chili*, vi. 259. 4.

Sauss. Mon. Guêpes Sol. 165. 52.

Odynerus Coquimbensis, *Sauss. Faun. Chili*, vi. *Supp.* 561. 1.

Hab. Chili.

173. ODYNERUS VILLOSUS.

Odynerus villosus, *Sauss. Faun. Chili*, vi. *Supp.* 563. 4; *Mon. Guêpes Sol.* 165. 53.

Hab. Chili.

174. ODYNERUS HUMERALIS.

B.M.

Odynerus humeralis, *Halid. Trans. Linn. Soc.* xvii. 324 ♀.*Odynerus Chiliensis*, *St. Farg. Hym.* ii. 643. 28.*Odynerus Chilensis*, *Spin. Faun. Chili*, vi. 255. 1.*Sauss. Mon. Guêpes Sol.* 166. 54. t. 17. f. 6, & *Supp.* 228.*Hab.* Chili; Columbia.

175. ODYNERUS ARCUATUS.

Odynerus arcuatus, *Sauss. Mon. Guêpes Sol.* 160. 45.*Hab.* Chili.

176. ODYNERUS AUTUCENSIS.

Odynerus Autuco, *Sauss. Mon. Guêpes Sol.* 167. 55, & *Supp.* 228.*Odynerus Autucensis*, *Sauss. Faun. Chili*, vi. *Supp.* 562. 2.*Hab.* Chili.

177. ODYNERUS CHILIOTUS.

Odynerus Chilotus, *Sauss. Mon. Guêpes Sol.* 167. 56, & *Supp.* 229. 167; *Faun. Chili*, vi. *Supp.* 564. t. 17. f. 6.*Hab.* Chili.

178. ODYNERUS RUFICOLLIS.

Odynerus ruficollis, *Spin. Faun. Chili*, vi. 259. 5.*Sauss. Mon. Guêpes Sol.* 168. 57.*Hab.* Chili.

179. ODYNERUS MAYPINUS.

Odynerus maipinus, *Sauss. Mon. Guêpes Sol.* 169. 58.*Odynerus maypinus*, *Sauss. Faun. Chili, Zool.* vi. *Supp.* 564. 5.*Hab.* Chili.

180. ODYNERUS GAYI.

B.M.

Odynerus Gayi, *Spin. Faun. Chili*, vi. 260. 6.*Sauss. Mon. Guêpes Sol.* 170. 59. t. 17. f. 7.*Hab.* Chili.

181. ODYNERUS VESPIFORMIS.

Odynerus vespiformis, *Halid. Trans. Linn. Soc.* xvii. 323. 33. (1837).*Odynerus hirsutulus*, *Spin. Faun. Chili*, vi. 57. 3.*Sauss. Mon. Guêpes Sol.* 212. 118.*Hab.* Chili.

182. ODYNERUS MOLINUS.

Odynerus Molinus, *Sauss. Mon. Guêpes Sol. Supp.* 262. 3.

Hab. Chili.

183. ODYNERUS PILOSUS.

Odynerus pilosus, *Sauss. Mon. Guêpes Sol. Supp.* t. 11. f. 8.

Hab. Peru.

184. ODYNERUS PERUENSIS.

Odynerus Peruensis, *Sauss. Mon. Guêpes Sol. Supp.* 253. 129.
t. 12. f. 4.

Hab. Peru.

185. ODYNERUS VESTITUS.

Odynerus vestitus, *Sauss. Mon. Guêpes Sol. Supp.* 252. 127.

Hab. Peru.

186. ODYNERUS ALASTEROIDES.

Odynerus Alasteroides, *Sauss. Mon. Guêpes Sol.* 147. 33. t. 16. f. 6.

Hab. Monte Video.

187. ODYNERUS FASTIDIOSUSCULUS.

Odynerus fastidiosusculus, *Sauss. Mon. Guêpes Sol.* 137. 19.

Hab. Brazil.

188. ODYNERUS PARAENSIS.

Odynerus Paraensis, *Sauss. Mon. Guêpes Sol. Supp.* 207. 95.

Hab. Para.

189. ODYNERUS BRACHYGASTER.

Odynerus brachygaster, *Sauss. Mon. Guêpes Sol.* 173. 63. t. 17. f. 8.

Hab. Brazil (Para).

190. ODYNERUS ADVENA.

B.M.

Odynerus advena, *Sauss. Mon. Guêpes Sol. Supp.* 222. 117. t. 11.
f. 3, 3 a, 3 b, 4.

Hab. Brazil.

191. ODYNERUS PUMILUS.

Odynerus pumilus, *Sauss. Mon. Guêpes Sol. Supp.* 197. 93.

Hab. Cayenne.

192. ODYNERUS COLUMBARIS.

Odynerus Columbaris, *Sauss. Mon. Guêpes Sol.* 158. 42. t. 17. f. 3.

Hab. Columbia.

193. ODYNERUS NASIDENS.

Odynerus nasidens, *Latr. Voy. aux Rég. Equinox., Humb. et Bonpl.* ii. 112. t. 15. f. 1-2.

Sauss. Mon. Guêpes Sol. 171. 61.

Hab. Columbia.

194. ODYNERUS BREVITHORAX.

B.M.

Odynerus brevithorax, *Sauss. Mon. Guêpes Sol.* 172. 62. t. 17. f. 9.

Hab. South America.

195. ODYNERUS TIBIALIS.

Odynerus tibialis, *Sauss. Mon. Guêpes Sol.* 183. 78.

Hab. Columbia.

196. ODYNERUS ROMANDINUS.

Odynerus Romandinus, *Sauss. Mon. Guêpes Sol.* 184. 79.

Hab. Columbia; Venezuela.

197. ODYNERUS INCOMMODUS.

Odynerus incommodus, *Sauss. Mon. Guêpes Sol.* 143. 29.

Hab. Columbia.

198. ODYNERUS TARABUCENSIS.

Odynerus Tarabucensis, *Sauss. Mon. Guêpes Sol. Supp.* 250. 125.

Hab. Bolivia.

199. ODYNERUS PRÆCÖX.

Odynerus præcox, *Sauss. Mon. Guêpes Sol. Supp.* 254. 130. t. 11. f. 9.

Hab. South America.

200. ODYNERUS PRUINOSUS.

B.M.

Female. Length 6 lines.—Black: in certain lights, covered with fine silvery pile; a stripe at the base of the clypeus, a minute spot between the antennæ and another behind the eyes, white; the head, thorax and base of the abdomen strongly punctured; the anterior margin of the prothorax, a spot beneath the

wings, the anterior and posterior margins of the tegulæ, a spot behind them, the post-scutellum and the lateral margins of the metathorax, a spot at the apex of the anterior femora behind, and the anterior and intermediate tibiæ outside, white; the metathorax truncate, slightly concave, with a central impressed line, on each side of which it is obliquely striated; the wings hyaline, with their margins clouded. The first and second segments of the abdomen with white fasciæ on their apical margins, that on the second continued beneath.

Hab. St. Domingo.

Div. VI.—Species of North America (Mexico, Carolina, Arctic America, Canada, &c.).

201. ODYNERUS TUBERCULICEPS.

Odynerus tuberculocephalus, *Sauss. Mon. Guêpes Sol.* 139. 22.
Odynerus tuberculiceps, *Sauss. Mon. Guêpes Sol. Supp.* 205. 139.
 t. 16. f. 9.

Hab. Mexico.

202. ODYNERUS SIMILIS.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: covered with ochraceous pubescence, and having also a clothing of changeable pale golden pile, that on the abdomen very brilliant in some positions; the clypeus truncate at the apex, the lateral angles acute, subdentate; a yellow spot between the antennæ and another at the apex of the clypeus. The thorax slightly narrowed anteriorly and posteriorly; the anterior margin of the prothorax not raised or sharply truncate; the metathorax rounded at the sides and truncate posteriorly and slightly concave; the wings hyaline, the anterior margin of the superior pair yellowish, the nervures ferruginous. Abdomen: the first segment much narrower than the second, strongly punctured, its apical margin marginate; the apical margin of the second and three following segments with a broad yellow fascia; the apical segment yellow with a black spot in the middle of its base; the fasciæ on the segments continued beneath.

Hab. Mexico.

This species closely resembles *Odynerus brevithorax*, but the thorax is not quadrate as in that insect, the metathorax is not widely truncate, nor is the post-scutellum produced at its apical margin: the form and sculpture of the basal segment are very different.

203. ODYNERUS CATEPETLENSIS.

Odynerus Catepetlensis, *Sauss. Mon. Guêpes Sol. Supp.* 255. 132.

Hab. Mexico.

204. ODYNERUS SYMMORPHUS.

Odynerus symmorphus, *Sauss. Mon. Guêpes Sol. Supp.* 246. 119.

Hab. Florida.

205. ODYNERUS CAMPESTRIS.

Odynerus campestris, *Sauss. Mon. Guêpes Sol.* 137. 18 ♀.

Hab. Carolina ; Florida.

206. ODYNERUS ADIABATUS.

Odynerus adiabatus, *Sauss. Mon. Guêpes Sol.* 138. 20.

Hab. Carolina.

207. ODYNERUS SÆCULARIS.

Odynerus sæcularis, *Sauss. Mon. Guêpes Sol.* 142. 26.

Hab. Carolina.

208. ODYNERUS FULVIPES.

B.M.

Odynerus flavipes, *St. Farg. Hym.* ii. 659. 39.

Sauss. Mon. Guêpes Sol. 142. 27.

Odynerus fulvipes, *Sauss. Mon. Guêpes Sol. Supp.* 205. t. 16. f. 3.

Hab. Carolina.

209. ODYNERUS QUADRISECTUS.

B.M.

Odynerus 4-sectus, *Say, Bost. Journ. Nat. Hist.* i. 385.

Sauss. Mon. Guêpes Sol. Supp. 206. t. 9. f. 9.

Odynerus Bellone, *St. Farg. Hym.* ii. 660. 40.

Sauss. Mon. Guêpes Sol. 146. 32. t. 16. f. 10.

Hab. Carolina.

210. ODYNERUS BOSCI.

B.M.

Odynerus Boscii, *St. Farg. Hym.* ii. 637.

Sauss. Mon. Guêpes Sol. 177. 69. t. 17. f. 10.

Hab. Carolina.

211. ODYNERUS ERYNNIS.

Odynerus Erynnis, *St. Farg. Hym.* ii. 645.

Sauss. Mon. Guêpes Sol. 178. 70.

Hab. Carolina.

212. ODYNERUS CASTIGATUS.

Odynerus castigatus, *Sauss. Mon. Guêpes Sol.* 178. 71.

Hab. Carolina.

213. ODYNERUS FORAMINATUS.

Odynerus foraminatus, *Sauss. Mon. Guêpes Sol.* 180. 73.

Hab. Carolina.

214. ODYNERUS MEGÆRA.

B.M.

Odynerus Megæra, *St. Farg. Hym.* ii. 636. 21.

Sauss. Mon. Guêpes Sol. 181. 74. t. 17. f. 11.

Hab. Carolina.

215. ODYNERUS TISIPHONE.

Odynerus Tisiphone, *St. Farg. Hym.* ii. 646.

Sauss. Mon. Guêpes Sol. 183. 77.

Hab. Carolina.

216. ODYNERUS HISTRIO.

B.M.

Odynerus histrio, *St. Farg. Hym.* ii. 638. 23.

Sauss. Mon. Guêpes Sol. 208. 112.

Hab. Carolina.

217. ODYNERUS BIRENIMACULATUS.

Odynerus birenimaculatus, *Sauss. Mon. Guêpes Sol.* 135. 16 ♀.

Hab. Carolina.

218. ODYNERUS CRISTATUS.

B.M.

Odynerus cristatus, *Sauss. Mon. Guêpes Sol. Supp.* 196. 92.

Hab. North America?

219. ODYNERUS UNCINATUS.

B.M.

Odynerus uncinatus, *Say, Bost. Journ. Nat. Hist.* i. 18. 34. 386.

Odynerus unifasciatus, *Sauss. Mon. Guêpes Sol.* 138. 21.

Hab. North America.

220. ODYNERUS PEDESTRIS.

Odynerus fuscipes, *Sauss. Mon. Guêpes Sol.* 143. 28 (nec Herr.-Schæff.).

Odynerus pedestris, *Sauss. Mon. Guêpes Sol. Supp.* 206.

Hab. North America.

221. ODYNERUS AMMONIS. B.M.

Odynerus ammonia, *Sauss. Mon. Guêpes Sol.* 144. 30.

Hab. North America ; Carolina.

222. ODYNERUS SPINOLÆ.

Odynerus Spinolæ, *Sauss. Mon. Guêpes Sol. Supp.* 216. 107.

Hab. Philadelphia.

223. ODYNERUS PERTINAX. B.M.

Odynerus pertinax, *Sauss. Mon. Guêpes Sol. Supp.* 216. 108.

Hab. United States (New York).

224. ODYNERUS CONFORMIS.

Odynerus conformis, *Sauss. Mon. Guêpes Sol. Supp.* 219. 112.

Hab. Louisiana ; New Orleans.

225. ODYNERUS OCULATUS.

Odynerus oculatus, *Say, Bost. Journ. Nat. Hist.* i. 385.

Sauss. Mon. Guêpes Sol. Supp. 219. 113.

Hab. North America (Ohio ; Missouri).

226. ODYNERUS LUCTUOSUS.

Odynerus luctuosus, *Sauss. Mon. Guêpes Sol. Supp.* 220. 114.

Hab. North America ; South Carolina.

227. ODYNERUS DIABOLICUS.

Odynerus diabolicus, *Sauss. Mon. Guêpes Sol.* 171. 60.

Hab. North America.

228. ODYNERUS RUGOSUS.

Odynerus rugosus, *Sauss. Mon. Guêpes Sol.* 179. 72.

Hab. North America.

229. ODYNERUS LEUCOMELAS. B.M.

Odynerus leucomelas, *Sauss. Mon. Guêpes Sol. Supp.* 255. 131.

Hab. North America (New York).

230. ODYNERUS PERSECUTOR.

Odynerus persecutor, *Sauss. Mon. Guêpes Sol. Supp.* 256. 133.
t. 14. f. 1.

Hab. North America.

231. ODYNERUS PENNSYLVANICUS.

Odynerus Pennsylvanicus, *Sauss. Mon. Guêpes Sol. Supp.* 257. 134.
Hab. North America.

232. ODYNERUS CATSKILLENSIS.

Odynerus Catskill, *Sauss. Mon. Guêpes Sol.* 136. 17. & *Supp.*
204. 136. t. 16. f. 8.
Hab. North America (Catskill).

233. ODYNERUS ALBOMARGINATUS.

B.M.

Odynerus albomarginatus, *Sauss. Mon. Guêpes Sol. Supp.* 195. 90.
Hab. Hudson's Bay.

234. ODYNERUS GUADULPENSIS.

Odynerus Guadulpensis, *Sauss. Mon. Guêpes Sol.* 182. 76.
Odynerus Cubensis, *Sauss. Mon. Guêpes Sol.* 181. 75?
Hab. Guadaloupe.

235. ODYNERUS CANADENSIS.

B.M.

Odynerus Canadensis, *Sauss. Mon. Guêpes Sol. Supp.* 196. 91.
Hab. Canada.

236. ODYNERUS SYLVEIRÆ.

Odynerus Sylveiræ, *Sauss. Mon. Guêpes Sol. Supp.* 217. 110.
t. 10. f. 8.
Hab. Arctic America.

237. ODYNERUS ALBOPHALERATUS.

B.M.

Odynerus albophaleratus, *Sauss. Mon. Guêpes Sol. Supp.* 217. 109.
Hab. Arctic America.

238. ODYNERUS FIGULUS.

Odynerus figulus, *Sauss. Mon. Guêpes Sol. Supp.* 247. 120.
Hab. Guadaloupe.

239. ODYNERUS ENYO.

Odynerus elegans, *Guérin, Icon. Règn. Anim. Ins.* t. 70. f. 5.
Odynerus Enyo, *St. Farg. Hym.* ii. 648. 33.
Sauss. Mon. Guêpes Sol. 185. 81.

Hab. Cuba ; Peru.

240. ODYNERUS BACUENSIS.

Odynerus Bacu, *Sauss. Mon. Guêpes Sol.* 185. 80. & *Supp.* 232.

Hab. Cuba.

241. ODYNERUS CUBENSIS.

Odynerus Cubensis, *Sauss. Mon. Guêpes Sol.* 181. 75. t. 18. f. 8.

Hab. Cuba.

242. ODYNERUS SIMPLICICORNIS.

Odynerus simplicicornis, *Sauss. Mon. Guêpes Sol. Supp.* 253. 128.

Hab. Cuba.

243. ODYNERUS VELOX.

Odynerus velox, *Sauss. Mon. Guêpes Sol.* 228. 136.

Hab. —?

244. ODYNERUS BIPUSTULATUS.

Vespa biguttata, *Fabr. Mant. Ins.* i. 291. 53; *Ent. Syst.* ii. 272. 68; *Syst. Piez.* 267. 72?

Oliv. Encycl. Méth. vi. 689. 99.

Odynerus bipustulatus, *Sauss. Mon. Guêpes Sol. Supp.* 277. 158. t. 12. f. 10.

Hab. China. (Mus. Paris.)

Genus 16. LEPTOCHILUS.

Discoelius, pt., *Brullé, Hist. Nat. Il. Canar.* pt. 2. 98 (1832).

Odynerus, pt., *St. Farg. Hym.* ii. 675 (1841).

Pterochilus, pt., *St. Farg. Hym.* ii. 675 (1841).

Leptochilus, *Sauss. Mon. Guêpes Sol.* 233 (1852).

1. LEPTOCHILUS ORANIENSIS.

B.M.

Odynerus Oraniensis, *St. Farg. Hym.* ii. 640. 25.

Lucas, Explo. Sc. Algér. iii. 237. t. 11. f. 10.

Leptochilus Oraniensis, *Sauss. Mon. Guêpes Sol.* 236. 5.

Hab. Algeria (Oran).

2. LEPTOCHILUS ORNATUS.

Leptochilus ornatus, *Sauss. Mon. Guêpes Sol.* 236. 6.

Hab. Carolina.

3. LEPTOCHILUS FALLAX.

Leptochilus fallax, *Sauss. Mon. Guêpes Sol.* 234. 2.

Hab. North America.

4. LEPTOCHILUS MAURITANICUS.

Pterochilus mauritanicus, *St. Farg. Hym.* ii. 675. 4.

Lucas, Explo. Sc. Algér. iii. 242. t. 7. f. 2.

Leptochilus mauritanicus, *Sauss. Mon. Guêpes Sol.* 233. 1.

Hab. Algeria.

5. LEPTOCHILUS CRUENTATUS.

Discoelius cruentatus, *Brullé, Hist. Nat. Il. Canar.* pt. 2. 98.
t. 3. f. 15.

Hab. Canary Islands.

6. LEPTOCHILUS MODESTUS.

Leptochilus modestus, *Sauss. Mon. Guêpes Sol.* 234. 2.

Hab. Algeria.

7. LEPTOCHILUS DENTICULATUS.

B.M.

Leptochilus denticulatus, *Sauss. Rev. et Mag. Zool.* p. 173 (1855).

Hab. Mexico.

Genus 17. PTEROCHILUS.

Vespa, pt., *Panz. Faun. Germ. fasc.* 47.

Pterochilus, *Klug, Beitr. z. Naturk. v. Weber u. Mohr*, i. 154.

1. PTEROCHILUS GLABRIPALPIS.

Pterochilus glabripalpis, *Sauss. Mon. Guêpes Sol.* 239. 1.

Hab. Senegal.

2. PTEROCHILUS LATIPALPIS.

Pterochilus latipalpis, *St. Farg. Hym.* ii. 678. 7.

Sauss. Mon. Guêpes Sol. 240. 2.

Hab. Crimea.

3. PTEROCHILUS PALLASII.

Pterochilus Pallasii, *Klug, Beitr. z. Naturk. v. Weber u. Mohr*,
i. 150. t. 3. f. 1-3.

Sauss. Mon. Guêpes Sol. 241. 3.

Hab. Russia; Asia Minor; Smyrna.

4. PTEROCHILUS UNIPUNCTATUS.

B.M.

Pterochilus unipunctatus, *St. Farg. Hym.* ii. 676. 5.*Lucas, Explo. Sc. Algér.* iii. 243. t. 12. f. 3.*Sauss. Mon. Guêpes Sol.* 242. 4.*Hab.* Algeria.

5. PTEROCHILUS ORNATUS.

Pterochilus ornatus, *St. Farg. Hym.* ii. 677. 6.*Lucas, Explo. Sc. Algér.* iii. 243. t. 12. f. 4.*Sauss. Mon. Guêpes Sol.* 242. 5.*Hab.* Algeria.

6. PTEROCHILUS PHALERATUS.

B.M.

Vespa phalerata, *Panz. Faun. Germ.* 47. 21.*Pterochilus phaleratus*, *Klug, Beitr. z. Naturk. v. Weber u. Mohr*, i. 154.*Latr. Gen. Crust. et Ins.* iv. 139.*Herr.-Schæff. Faun. Germ.* 173. 16-18.*St. Farg. Hym.* ii. 673. 3.*Sauss. Mon. Guêpes Sol.* 243. 6.*Hab.* Europe.

7. PTEROCHILUS BIGLUMIS.

Pterochilus biglumis, *Sauss. Mon. Guêpes Sol.* 243. 7.*Hab.* Cape of Good Hope.

8. PTEROCHILUS MAJOR.

Pterochilus major, *Sauss. Mon. Guêpes Sol.* 244. 8.*Hab.* Cape of Good Hope.

9. PTEROCHILUS NUMIDA.

Pterochilus numida, *St. Farg. Hym.* ii. 672. 2.*Lucas, Explo. Sc. Algér.* iii. 241. t. 7. f. 5.*Sauss. Mon. Guêpes Sol.* 245. 9.*Hab.* Algeria.

10. PTEROCHILUS CHEVRIERANUS.

Pterochilus Chevrieranus, *Sauss. Mon. Guêpes Sol. Supp.* 322.
208 ♀ ♂.*Hab.* Switzerland.

11. *PTEROCHILUS GRANDIS*.

Pterochilus grandis, *St. Farg. Hym.* ii. 671. 1.

Lucas, Explo. Sc. Algér. iii. 241. t. 12. f. 1.

Sauss. Mon. Guêpes Sol. 246. 10.

Hab. Algeria.

12. *PTEROCHILUS INTERRUPTUS*.

Pterochilus interruptus, *Klug, Beitr. z. Naturg. v. Weber u. Mohr*, i. 152.

Sauss. Mon. Guêpes Sol. 246. 11.

Hab. Algeria.

13. *PTEROCHILUS PILIPALPUS*.

Epipona pilipalpa, *Spin. Faun. Chili, Zool.* vi. 252.

Pterochilus pilipalpus, *Sauss. Mon. Guêpes Sol.* 247. 12.

Hab. Chili.

14. *PTEROCHILUS QUINQUEFASCIATUS*.

Pterochilus quinquefasciatus, *Say, Exped. Source St. Peter's River*, ii. *Supp.* 79.

Sauss. Mon. Guêpes Sol. 248. 13.

Hab. United States (Missouri).

15. *PTEROCHILUS CAPENSIS*.

Pterochilus Capensis, *Sauss. Mon. Guêpes Sol. Supp.* 323. 209. t. 15. f. 11 ♀.

Hab. Cape of Good Hope.

16. *PTEROCHILUS INSIGNIS*.

B.M.

Pterochilus insignis, *Sauss. Mon. Guêpes Sol. Supp.* 324. 210. t. 15. f. 12 ♀ ♂.

Hab. Cape of Good Hope; South Africa. (Coll. Dr. A. Smith.)

Genus 18. *ALASTOR*.

Odynerus, pt., *Guér. Voy. Coq. Ins.* ii. 266 (1830).

Alastor, *St. Farg. Hym.* ii. 668 (1841).

1. *ALASTOR ATROPOS*.

Alastor Atropos, *St. Farg. Hym.* ii. 669. 2.

Sauss. Mon. Guêpes Sol. 257. 12.

Descr. Egypt. (Savigny) Hym. t. 9. f. 16.

Hab. France (Paris and St. Lever).

2. ALASTOR LUCIDA.

Alastor lucida, *Sauss. Mon. Guêpes Sol.* 257. 13.

Hab. — ?

3. ALASTOR ANGUSTICOLLIS.

Alastor angusticollis, *Spin. Faun. Chili, Zool.* vi. 261.

Sauss. Mon. Guêpes Sol. 258. 14.

Hab. Chili.

4. ALASTOR MELANOSOMA.

Alastor melanosoma, *Sauss. Mon. Guêpes Sol.* 259. 15.

Hab. Brazil.

5. ALASTOR SINGULARIS.

Alastor singularis, *Sauss. Mon. Guêpes Sol.* 259. 16.

Hab. Brazil.

6. ALASTOR CLOTHO.

Alastor Clotho, *St. Farg. Hym.* ii. 668. 1.

Sauss. Mon. Guêpes Sol. 250. 1.

Hab. New Holland.

7. ALASTOR AUSTRALIS.

Alastor Australis, *Sauss. Mon. Guêpes Sol.* 250. 2.

Hab. New Holland.

8. ALASTOR ERIURGUS.

Alastor eriurgus, *Sauss. Mon. Guêpes Sol.* 251. 4.

Hab. New Holland.

9. ALASTOR AUREOCINCTUS.

B.M.

Odynerus aureocinctus, *Guér. Voy. de la Coq. Zool.* 266. t. 9. f. 4.

Alastor aureocinctus, *Sauss. Mon. Guêpes Sol.* 252. 5.

Hab. New Holland.

10. ALASTOR PARCA.

Alastor parca, *Sauss. Mon. Guêpes Sol.* 254. 9.

Hab. New Holland.

11. ALASTOR SIMILIS.

Alastor similis, *Sauss. Mon. Guêpes Sol.* 256. 11.

Hab. New Holland.

12. *ALASTOR ARGENTIFRONS*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the head and thorax coarsely punctured; the clypeus much longer than broad, its apical margin obtusely emarginate; a minute spot behind the eyes, a spot between the antennæ and the clypeus, orange-red; the margins of the clypeus, a spot at its base, and an abbreviated line in the middle at its apex, black; the sides of the clypeus and inner orbit of the eyes with a glittering silvery pubescence. Thorax: an orange spot on each side of the prothorax in front; the knees, tibiæ and tarsi ferruginous; the wings fusco-hyaline, darkest along the anterior margin of the superior pair; the thorax beneath, the femora and abdomen beneath, covered with a fine silky silvery pubescence. Abdomen with an orange band on the apical margin of the first segment, which is recurved on each side; the rest of the abdomen orange-red above, with a large subangular black spot at the base of the second segment extending to two-thirds of its length; beneath, the first and second segments black, the second with an orange fascia on its apical margin suddenly widened on each side; the following segments have their apical margins yellowish.

Hab. Australia.

13. *ALASTOR CARINATUS*.

Female. Length 6 lines.—Black: the head and thorax coarsely punctured; the clypeus longer than broad, slightly reflexed at the apex, which is truncate; above and between the antennæ is a short carina; a minute orange spot behind the eyes. Thorax: a minute orange spot on each side of the posterior margin of the prothorax; the wings fuscous, darkest along the anterior margin of the superior pair; the knees and the tibiæ ferruginous, the latter dusky outside; the metathorax truncate, the truncation slightly concave, with an impressed longitudinal line in the middle. Abdomen: the first segment truncate at the base, with a slight carina at the verge of the truncation, which is rugose; the first segment with an orange band on its apical margin, widest and notched in the middle and emarginate on each side; the other segments yellow; the base of the second segment black at the base, forming an angular shape in the middle, and with a square notch on each side; beneath, tuberculate in the middle of its base.

Hab. Adelaide. (Coll. F. Smith.)

This species is allied to the *A. aureocinctus* of Guérin, which has the basal segment of the abdomen truncate; but that insect has the clypeus bidentate at the apex, and has also a minute

tooth in the middle between the lateral ones, independent of the difference of coloration.

14. *ALASTOR LACHESIS*.

Alastor Lachesis, *Sauss. Mon. Guêpes Sol.* 251. 3.

Hab. Tasmania.

15. *ALASTOR TASMANIENSIS*.

Alastor Tasmaniensis, *Sauss. Mon. Guêpes Sol.* 253. 6.

Hab. Tasmania.

16. *ALASTOR TUBERCULATUS*.

Alastor tuberculatus, *Sauss. Mon. Guêpes Sol.* 253. 7.

Hab. Tasmania.

17. *ALASTOR EMARGINATUS*.

Alastor emarginatus, *Sauss. Mon. Guêpes Sol.* 254. 8.

Hab. Tasmania.

18. *ALASTOR PUNCTULATUS*.

Alastor punctulatus, *Sauss. Mon. Guêpes Sol.* 255. 10.

Hab. Tasmania.

19. *ALASTOR PICTETI*.

Alastor Picteti, *Sauss. Mon. Guêpes Sol.* 256. 12.

Hab. Tasmania.

20. *ALASTOR ALBOCINCTUS*.

B.M.

Male. Length 5 lines.—Black: the head and thorax roughly punctured; a minute spot behind the eyes and the clypeus white; the anterior margin of the latter truncate, straight. An elongate spot on each side of the posterior margin of the prothorax, a spot beneath the wings, and a minute one on each side of the scutellum, white; the wings subhyaline, with the anterior margin of the superior pair darkest; the scale black, the tibiæ and tarsi ferruginous. Abdomen: the basal segment much narrower than the second and with a few scattered punctures; the apical margins of the first and second segments with a narrow white band.

Hab. Tasmania.

This is probably the male of *A. punctulatus*, which it closely resembles, and with which it agrees in having the anterior margin of the clypeus straight.

Group 2. Social Wasps.

Family 3. VESPIDÆ, *Steph.*

This group is distinguished by the intermediate and posterior tibiæ having two spines at their apex, and by the claws of the tarsi being simple.

Vespariæ, *Latr. Hist. Nat.* (1802).

Vespides, *Leach, Edinb. Encycl.* (1812).

Vespida, *Steph. Syst. Cat.* (1829).

Vespina et Vespites, *Newm. Ent. Mag.* (1834).

Genus 1. ISCHNOGASTER.

Ischnogaster, *Guér. Voy. Coq. Ins.* 269 (1838).

1. ISCHNOGASTER FULGIPENNIS.

Ischnogaster fulgipennis, *Guér. Voy. Coq. Ins.* 269.

Sauss. Mon. Guêpes Soc. 7. 1; *Ann. Soc. Ent. Fr.* 2nd ser. x. 23.

Stenogaster fulgipennis, *Guér. Voy. Coq. Ins.* t. 9. f. 9.

Hab. New Guinea.

2. ISCHNOGASTER MICANS.

B.M.

Ischnogaster micans, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 24; *Mon. Guêpes Soc.* 8. 2.

Hab. Java; Borneo (Sarawak). (Coll. A. Wallace.)

3. ISCHNOGASTER MELLII.

Ischnogaster Mellii, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 25. t. 2. f. 1; *Mon. Guêpes Soc.* 9. 3.

Hab. Java.

4. ISCHNOGASTER CILIPENNIS.

B.M.

Male. Length $5\frac{1}{4}$ lines.—Black: the head smooth and shining; the clypeus prolonged into an acute point at the apex; the mandibles, organs of the mouth, extreme apex of the clypeus, the scape in front, the flagellum beneath and its three apical joints outside, of a pale yellowish-white; a broad yellow fascia on the front, crossing at the emargination of the eyes, its upper margin curved on each side, the curves meeting in front of the anterior ocellus; its lower margin irregularly notched. Thorax: the lateral hinder margins of the prothorax have a narrow border of yellow, which runs to the tegulæ; the anterior margin of the

latter, and a spot beneath the wings, yellow; the legs pale rufo-testaceous; the coxæ outside, the apex of the femora, and the anterior and intermediate tibiæ in front, yellow; the posterior tibiæ and tarsi, and also the intermediate tarsi, thinly fringed outside with long fine hairs; the anterior tibiæ have a row of spines or hairs which are thickened at their apex, forming clavate appendages; the scutellum, post-scutellum, and a longitudinal stripe, the width of the scutellum, on the metathorax, white; the wings subhyaline and splendidly iridescent; the hinder wings with a fringe of fine long hairs on their posterior margin. The petiole of the abdomen above, a transverse stripe at the base of the fifth and sixth segments, and the seventh entirely, yellow; a minute lateral spot on the third segment, and all the segments with a spot on each side beneath.

Hab. Malacca (Mount Ophir). (Coll. A. Wallace.)

5. ISCHNOGASTER NITIDIPENNIS.

Ischnogaster nitidipennis, *Sauss. Mon. Guêpes Soc.* 10. 4.

Hab. Cayenne.

Genus 2. BELONOGASTER.

Vespa, pt., *Fabr. Ent. Syst.* ii. 279 (1793).

Zethus, pt., *Fabr. Syst. Piez.* 282 (1804).

Raphigaster, *Sauss. Mon. Guêpes Soc.* 12 (1853): nec *Lap.* (*Hemip.*) 1833.

Belonogaster, *Sauss. Mon. Guêpes Soc. Append.* (1853).

Sphex, pt., *De Geer, Mem.* vi. (1773).

1. BELONOGASTER JUNCEUS.

B.M.

Vespa juncea, *Fabr. Mant. Ins.* i. 293. 73; *Ent. Syst.* ii. 277. 85.

Oliv. Encycl. Méth. Ins. vi. 673.

Vespa Guineensis, *Fabr. Ent. Syst.* ii. 277. 85.

Vespa cinerea, *Fabr. Ent. Syst.* ii. 279. 92.

Zethus Guineensis, *Fabr. Syst. Piez.* 283. 2.

Zethus cinereus, *Fabr. Syst. Piez.* 283. 3.

Raphigaster junceus, *Sauss. Mon. Guêpes Soc.* 14. 1. t. 2. f. 2.

Hab. Africa (Congo; Senegal; Abyssinia).

2. BELONOGASTER RUFIPENNIS.

B.M.

Sphex rufipennis, *De Geer, Mém. Ins.* vii. 611. t. 45. f. 10.

Vespa macilenta, *Fabr. Spec. Ins.* i. 468. 61? *Mant. Ins.* i. 293. 74; *Ent. Syst.* ii. 280. 93.

Sphex dimidiata, *Christ. Hym.* 313. t. 31. f. 4.

Raphigaster rufipennis, *Sauss. Mon. Guêpes Soc.* 15. 2.

Hab. Africa.

3. BELONOGASTER GRISEUS.

B.M.

Vespa grisea, *Fabr. Syst. Ent.* 372. 43; *Spec. Ins.* i. 468. 59;
Mant. Ins. i. 293. 72; *Ent. Syst.* ii. 279. 91.

Oliv. Encycl. Méth. vi. 672.

Sphex grisea, *Christ. Hym.* 313.

Hab. Africa (Senegal; Sierra Leone; Whydah).

An examination of the typical specimen of this species satisfactorily proves that it cannot be regarded as a variety of *B. rufipennis*; the petiole in this species being considerably longer and more slender. Specimens from Whydah have the wings very dark brown, or nearly black.

4. BELONOGASTER MADECASSUS.

Raphigaster Madecassus, *Sauss. Mon. Guêpes Soc.* 16. 3.

Hab. Madagascar.

5. BELONOGASTER FILIVENTRIS.

Raphigaster filiventris, *Sauss. Mon. Guêpes Soc.* 16. 4.

Hab. Senegal.

6. BELONOGASTER GUERINI.

B.M.

Raphigaster Guerini, *Sauss. Mon. Guêpes Soc.* 17. 5. t. 2. f. 3.

Hab. Madagascar; Sierra Leone. (Coll. Rev. D. F. Morgan.)

7. BELONOGASTER INDICUS.

Raphigaster indicus, *Sauss. Mon. Guêpes Soc.* 17. 6.

Hab. India.

8. BELONOGASTER MACILENTUS.

B.M.

Raphigaster filiformis, *Sauss. Mon. Guêpes Soc.* 13. 7. t. 2. f. 4.

Zethus macilentus, *Fabr. Syst. Piez.* 283. 4. (var.)

Hab. Arabia (Djidda); Port Natal.

Genus 3. MISCHOCYTTARUS.

Zethus, pt., *Fabr. Syst. Piez.* 282 (1804).

Mischocyttarus, *Sauss. Mon. Guêpes Soc.* 19 (1854).

1. MISCHOCYTTARUS LABIATUS.

B.M.

Zethus labiatus, *Fabr. Syst. Piez.* 284. 6.*Mischocyttarus labiatus*, *Sauss. Mon. Guépes Soc.* 20. 1. t. 3. f. 8.*Hab.* Cayenne; Brazil (Villa Nova on the Amazons). (Coll. H. W. Bates.)

2. MISCHOCYTTARUS SMITHII.

B.M.

Mischocyttarus Smithii, *Sauss. Mon. Guépes Soc.* 21. 2.*Hab.* Brazil.

Genus 4. ICARIA.

Vespa, pt., *Fabr. Ent. Syst.* ii. 253 (1793).*Polistes*, pt., *Fabr. Syst. Piez.* 269 (1804).*Rhopalidia*, *Guér. Voy. de la Coq. Zool.* ii. (1830).*Epipona*, *St. Farg. Hym.* i. 540 (1836).*Icaria*, *Sauss. Mon. Guépes Soc.* 22 (1853).DIV. I.—*Species of New Guinea and Madagascar.*

1. ICARIA MACULIVENTRIS.

Rhopalidia maculiventris, *Guér. Voy. de la Coq. Zool.* ii. pt. 2.*Ins.* 267. t. 9. f. 8.*Icaria maculiventris*, *Sauss. Mon. Guépes Soc.* 23. 1.*Hab.* New Guinea.

2. ICARIA AUSTRALIS.

Icaria Australis, *Sauss. Mon. Guépes Soc.* 24. 2.*Hab.* New Guinea.

3. ICARIA REACTIONALIS.

Icaria reactionalis, *Sauss. Mon. Guépes Soc.* 28. 6.*Hab.* New Guinea.

4. ICARIA CONSTITUTIONALIS.

Icaria constitutionalis, *Sauss. Mon. Guépes Soc.* 30. 8. t. 4. f. 4.*Hab.* Madagascar.

5. ICARIA POMICOLOR.

Icaria pomicolor, *Sauss. Mon. Guépes Soc.* 32. 9. t. 5. f. 3.*Hab.* Madagascar.

6. ICARIA DUBIA.

Icaria dubia, *Sauss. Mon. Guêpes Soc.* 33. 10.

Hab. Madagascar.

7. ICARIA DEMOCRATICA.

Icaria democratica, *Sauss. Mon. Guêpes Soc.* 33. 11.

Hab. Madagascar.

8. ICARIA ANARCHICA.

Icaria anarchica, *Sauss. Mon. Guêpes Soc.* 34. 12. t. 5. f. 4.

Hab. Madagascar.

9. ICARIA PHALANSTERICA.

Icaria phalansterica, *Sauss. Mon. Guêpes Soc.* 35. 13. t. 4. f. 5.

Hab. Madagascar.

10. ICARIA GALIMATIA.

Icaria galimatia, *Sauss. Mon. Guêpes Soc.* 36. 14.

Hab. Madagascar.

DIV. II.—*Species of Australia and Tasmania.*

11. ICARIA? ROMANDI.

Polistes Romandi, *Guillou, Ann. Soc. Ent. Fr.* 1st ser. x. 322.

Icaria? Romandi, *Sauss. Mon. Guêpes Soc.* 41. 6.

Hab. Australia.

12. ICARIA REVOLUTIONALIS.

Icaria revolutionalis, *Sauss. Mon. Guêpes Soc.* 29. 7. t. 5. f. 7.

Hab. New Holland or Tasmania.

13. ICARIA CABETI.

Icaria cabeti, *Sauss. Mon. Guêpes Soc.* 26. 4. t. 5. f. 2.

Hab. Tasmania.

14. ICARIA SOCIALISTICA.

B.M.

Icaria socialistica, *Sauss. Mon. Guêpes Soc.* 27. 5.

Hab. Tasmania.

DIV. III.—*Species of Africa.*

15. ICARIA CINCTA.

B.M.

Epipona cincta, *St. Farg. Hym.* i. 541. 2.*Icaria cincta*, *Sauss. Mon. Guêpes Soc.* 39. 18. t. 5. f. 9.*Hab.* Senegal; Sierra Leone. (Coll. The Rev. D. F. Morgan.)

16. ICARIA GUTTATIPENNIS.

B.M.

Icaria guttatipennis, *Sauss. Mon. Guêpes Soc.* 40. 19. t. 5. f. 8.*Hab.* Senegal; Port Natal; the Gambia.

17. ICARIA POLITICA.

Icaria politica, *Sauss. Mon. Guêpes Soc. Append.* 240 ♀ ♂.*Hab.* Senegal.

18. ICARIA CLAVATA.

Icaria clavata, *Sauss. Mon. Guêpes Soc.* 40. 20.*Hab.* Cape of Good Hope.DIV. IV.—*Species of India, East India Islands and China.*

19. ICARIA ARISTOCRATICA.

Icaria aristocratica, *Sauss. Mon. Guêpes Soc.* 37. 15.*Hab.* India.

20. ICARIA FERRUGINEA.

B.M.

Vespa ferruginea, *Fabr. Ent. Syst.* ii. 280. 95.*Polistes ferruginea*, *Fabr. Syst. Piez.* 277. 39.*Icaria ferruginea*, *Sauss. Mon. Guêpes Soc.* 38. 17. t. 5. f. 6.*Hab.* India (Madras). (Coll. Walter Elliot, Esq.)

21. ICARIA MARGINATA.

B.M.

Epipona marginata, *St. Farg. Hym.* i. 541. 3.*Icaria marginata*, *Sauss. Mon. Guêpes Soc.* 237.*Hab.* India (Madras). (Coll. Walter Elliot, Esq.)

22. ICARIA VARIEGATA.

B.M.

Epipona variegata, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 48 (1852).*Icaria variegata*, *Sauss. Mon. Guêpes Soc.* 237.*Hab.* India (Poonah).

23. ICARIA PENDULA.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Ferruginous: covered with a fine short hoary down; the mandibles, a broad stripe behind the eyes, the clypeus, the face as high as the insertion of the antennæ, and the scape in front, yellow; the clypeus with a ferruginous stripe down the centre. Thorax: the anterior and posterior margins of the prothorax, the tegulæ, the basal and lateral margins of the scutellum, the post-scutellum, two broad longitudinal lines on the metathorax, and the breast and legs variegated with yellow; the wings hyaline, with a dark fuscous spot at the apex of the marginal cell. Abdomen: a narrow yellow fascia at the apical margin of the first segment; a large yellow macula on each side of the second at its base, and a broad fascia on its apical margin; the following segments sometimes with yellow fasciæ, sometimes immaculate, very variable in this respect.

Var. The yellow line at the base of the scutellum sometimes interrupted.

Hab. India (Bareilly). (Coll. C. Horne, Esq.)

This species closely resembles *Icaria variegata*, but it differs in having the petiole of the abdomen shorter, and in having only the margins of the scutellum yellow; a number of specimens with their nest having been examined and the above differences found to be constant.

24. ICARIA FORMOSA.

B.M.

Icaria formosa, *Sauss. Mon. Guêpes Soc.* 37. 16.

Hab. India.

25. ICARIA ARTIFEX.

B.M.

Icaria variegata, *Sauss. Mon. Guêpes Soc.* 25. 3. t. 4. f. 3 (nec *Smith*).

Hab. Java; India.

26. ICARIA SUMATRÆ.

Vespa Sumatræ, *Weber, Obs. Entom.* 103. 1.

Vespa mutillata, *Illig. Mag. Ins.* i. 189. 19.

Polistes pubescens, *Fabr. Syst. Piez.* 279. 49.

Icaria Sumatræ, *Sauss. Mon. Guêpes Soc. Append.* 241.

Hab. Sumatra.

27. ICARIA SPECIOSA.

B.M.

Icaria speciosa, *Sauss. Rev. Zool.* (1855) p. 374.

Hab. Sumatra; Malacca; Borneo. (Coll. A. Wallace.)

The specimens received from Borneo have the basal segment of the abdomen black.

28. ICARIA OPULENTA.

B.M.

Female. Length 6-6½ lines.—Black, and covered with a fine short changeable silky pile; the anterior margin of the clypeus angular, and bordered with white; a white spot at the base of the mandibles; the antennæ obscurely ferruginous beneath. The metathorax with a deeply impressed line in the middle and more or less ferruginous towards the apex; the wings subhyaline, with a fuscous stain along the anterior margin of the superior pair, which are also clouded at their apex, the marginal cell darkly so. The first and second segments of the abdomen ferruginous; the apical margins of the following segments obscurely rufo-testaceous.

Hab. Borneo (Sarawak). (Coll. A. Wallace.)

29. ICARIA FLAVO-PICTA.

B.M.

Female. Length 3½ lines.—Black: the mandibles, clypeus, a broad stripe at the inner orbits of the eyes terminating at their emargination, an interrupted line behind the eyes, and the scape in front, yellow; the flagellum fulvous beneath. The anterior and posterior margins of the prothorax, a spot beneath the wings and a second placed in an oblique direction beneath it, the coxæ, tips of the femora, and the tibiæ outside, yellow; the tegulæ, two longitudinal stripes on the mesothorax, two large ovate spots on the scutellum, the post-scutellum, and the sides of the metathorax, yellow; the wings hyaline and iridescent, the nervures brown; the tarsi rufo-testaceous. Abdomen: the basal segment with an ovate spot on each side at its apex, a waved line on each side of the second segment at its base, its apical margin as well as those of the following segments with a broad fascia, yellow; beneath, the second segment with a yellow spot in the middle at its base.

Hab. Borneo (Sarawak). (Coll. A. Wallace.)

30. ICARIA HONGKONGENSIS.

B.M.

Icaria Hongkongensis, *Sauss. Mon. Guêpes Soc. Append.* 239 ♀.

Hab. China (Hong Kong).

31. ICARIA PHILIPPINENSIS.

B.M.

Icaria Philippinensis, *Sauss. Mon. Guêpes Soc. Append.* 240 ♀.

Hab. Philippine Islands.

32. ICARIA LEFEBVREI.

Polistes Lefebvrei, *Le Guillou, Ann. Soc. Ent. Fr.* 1 sér. x. 322.

Hab. Triton Bay.

Genus 5. ANTHRENEIDA.

Anthreneida, *White, Ann. & Mag. Nat. Hist.* vii. p. 321 (1841).

1. ANTHRENEIDA CORONATA.

B.M.

Anthreneida coronata, *White, Ann. & Mag. Nat. Hist.* vii. p. 321.

Hab. Not known.

Genus 6. POLISTES.

Vespa, pt., *Linn. Faun. Suec.* 418 (1761); *Syst. Nat.* i. (1766).

Fabr. Syst. Ent. 362 (1775); *Ent. Syst.* ii. 253 (1793).

Polistes, *Latr. Hist. Nat. Ins.* xiii. (1804).

Cyclostoma & *Gyrostoma*, *Kirby, Introd. Ent.* iii. 631 & 633. ed. 5.

Odynerus, pt., *Spin. Ins. Lig.* ii. (1808).

Div. I.—*Species of Europe.*

1. POLISTES BIGLUMIS.

B.M.

Vespa biglumis, *Linn. Faun. Suec.* 418. 1680; *Syst. Nat.* i. 951. 17.

Müller, Linn. Syst. Nat. Ins. ii. 884. 17.

Fabr. Syst. Ent. 373. 48; *Spec. Ins.* i. 469. 67; *Mant. Ins.* 294. 81; *Ent. Syst.* ii. 271. 64; *Syst. Piez.* 264. 63.

Villers, Ent. iii. 271. 13.

Christ. Hym. 245.

Oliv. Encycl. Méth. vi. 692. 115.

Jurine, Hym. 169.

Panz. Faun. Germ. 53. 7.

Vespa parietum, *Scop. Ent. Carn.* no. 827.

Polistes biglumis, *Sauss. Mon. Guêpes Soc.* 46. 1.

Hab. Sweden.

2. POLISTES GALLICUS.

B.M.

Vespa gallica, *Linn. Syst. Nat.* i. 949. 7.

Müll. Edit. Linn. Ins. ii. 881. 7.

Fabr. Spec. Ins. i. 460. 10; *Mant. Ins.* i. 287. 11; *Ent. Syst.* ii. 257. 13.

Rossi, Faun. Etrus. ii. 83. 862.

Schränk, Ins. Austr. 789.

Villers, Ent. iii. 266. 5.

Christ. Hym. 233.

- Vespa gallica*, *Walcken. Faun. Par.* ii. 91.
Latr. Ann. Mus. i. 291.
Spin. Ins. Lig. i. 82, & ii. 183.
- Vespa parietum*, *Scop. Ent. Carn.* no. 827. var. 1.
Poda, Mus. Græc. 108.
- Vespa bimaculata*, *Fourc. Ent. Par.* ii. 433. 5.
- Vespa dominula*, *Christ. Hym.* 229. t. 21. f. 1.
- Vespa nimpha*, *Christ. Hym.* 232. t. 1. f. 2.
- Polistes Gallicus*, *Latr. Hist. des Crust. et Ins.* viii. 348.
Panz. Faun. Germ. 49. 22.
St. Farg. Encycl. Méth. x. 172. 6; *Hym.* i. 527. t. 9. f. 4, 6.
Blanch. Règn. An. Illustr. Ins. t. 124. f. 6; *Hist. des Ins.* i. 66. t. 2. f. 6, 7.
Sauss. Mon. Guêpes Soc. 48. 2.
- Polistes Lefebvrii*, *Guérin, Icon. Règn. An. Ins.* 447. t. 72. f. 6.
- Polistes pectoralis*, *Herr.-Schæff. Faun. Germ.* 179. t. 6. f. 39.
- Polistes Italica*, *Herr.-Schæff. Faun. Germ.* p. 39.
Réaumur. Mém. Ins. vi. t. 25. f. 6.
Savigny, Descr. de l'Égypt. Hym. t. 8. f. 2.
- Hab.* Europe; Egypt.

3. POLISTES DIADEMA.

B.M.

- Vespa diadema*, *Latr. Ann. Mus.* i. 292. t. 21. f. 4-6.
- Polistes diadema*, *Latr. Hist. des Crust. et Ins.* xiii. 349.
St. Farg. et Serv. Encycl. x. 173. 7.
Herr.-Schæff. Faun. Germ. 179. 40.
St. Farg. Hym. i. 528.
Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters. vi. 307. 986.
Sauss. Mon. Guêpes Soc. Append. 243.
- Polistes Geoffroyi*, *St. Farg. Hym.* i. 527.
- Hab.* Europe.

4. POLISTES BUCHARENSIS.

- Polistes Bucharensis*, *Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters.* vi. 307. 985 (1849).
- Hab.* Wallachia (Bucharest).

DIV. II.—Species of India and East India Islands.

5. POLISTES HEBRÆUS.

B.M.

- Vespa hebræa*, *Fabr. Mant. Ins.* i. 292. 58; *Ent. Syst.* ii. 274. 74.
Oliv. Encycl. Méth. vi. 690. 105.

Polistes hebræa, *Fabr. Syst. Piez.* 273. 21.

St. Farg. Hym. i. 525. 12.

Polistes Macaensis, *Fabr. Syst. Piez.* 272. 12.

Westw. Ins. Ind. 91. t. 57. f. 4.

Vespa undata, *Oliv. Encycl. Méth.* vi. 684. 72.

Polistes hebræus, *Sauss. Mon. Guêpes Soc.* 53. 10.

Hab. India; China; Persia; Isle of France.

6. *POLISTES ORIENTALIS.*

B.M.

Cyclostoma orientalis, *Kirby, Introd. Ent.* iii. 633. ed. 1. ♂.

Gyrostoma orientalis, *Kirby, Introd. Ent.* iii. 631. ed. 5.

Hab. India; China.

7. *POLISTES CONFUSUS.*

B.M.

Polistes orientalis, *St. Farg. Hym.* i. 519 ♀.

Sauss. Mon. Guêpes Soc. 251.

Polistes Schach, *Sauss. Mon. Guêpes Soc.* 50. 3.

Hab. India; China.

The *Polistes confusus* is in all probability the female of *P. orientalis*; all the specimens known which agree with Kirby's insect are males.

8. *POLISTES HOPLITES.*

Polistes hoplites, *Sauss. Mon. Guêpes Soc.* 55. 11. & p. 255.

Hab. India.

9. *POLISTES STIGMA.*

B.M.

Vespa stigma, *Fabr. Ent. Syst.* ii. 275. 78.

Vespa tamula, *Fabr. Ent. Syst. Supp.* 263. 78.

Polistes tamula, *Fabr. Syst. Piez.* 274. 27.

Polistes stigma, *Fabr. Syst. Piez.* 261. 41.

Sauss. Mon. Guêpes Soc. 64. 21. t. 6. f. 3.

Hab. India; Ceram; Celebes. (Coll. Madame Ida Pfeiffer.)

10. *POLISTES SAGITTARIUS.*

B.M.

Polistes sagittarius, *Sauss. Mon. Guêpes Soc.* 56. 12.

Var. Specimens from Greece have the thorax and second segment of the abdomen ferruginous.

Hab. India; China; Greece.

11. *POLISTES TENEBRICOSUS.**Polistes tenebricosus*, *St. Farg. Hym.* i. 529. 17.*Sauss. Mon. Guêpes Soc.* 51. 5.*Hab.* Java.12. *POLISTES MACULIPENNIS.**Polistes maculipennis*, *Sauss. Mon. Guêpes Soc.* 61. 19. t. 6. f. 4.*Hab.* Java.13. *POLISTES DIABOLICUS.*

B.M.

Polistes diabolicus, *Sauss. Mon. Guêpes Soc.* 68. 26. t. 6. f. 7.*Hab.* Java ; Timor.14. *POLISTES CALLIMORPHUS.**Polistes callimorpha*, *Sauss. Mon. Guêpes Soc.* 71. 31. & p. 25b.
t. 10. f. 1.*Hab.* Island of Timor.15. *POLISTES LATERITIUS.*

B.M.

Female. Length 9 lines.—Brick-red: the basal segment of the abdomen, the metathorax, the posterior portion of the metathorax beneath the wings and the intermediate and posterior coxæ, black; a line on the inner orbit of the eyes, a transverse line at the base of the post-scutellum, the filaments on each side of the insertion of the abdomen and an abbreviated longitudinal line on each side of the metathorax, yellow; the posterior margin of the three basal segments of the abdomen with obscure yellow fasciæ; the wings yellowish hyaline.

Male.—Closely resembles the female, but with the face, scape in front and the mandibles, yellowish; the metathorax black only at the apex.

Hab. Ceram.DIV. III.—*Species of China and the Philippines.*16. *POLISTES CHINENSIS.*

B.M.

Vespa Chinensis, *Fabr. Ent. Syst.* ii. 261. 29.*Polistes Chinensis*, *Fabr. Syst. Piez.* 270. 6.*Sauss. Mon. Guêpes Soc.* 56. 13. t. 7. f. 2.*Vespa bimaculata*, *Oliv. Encycl. Méth.* vi. 678. 46 (var.?).*Hab.* China; Hong Kong; North China (Shanghai).

17. **POLISTES MANDARINIUS.** B.M.

Polistes mandarinus, *Sauss. Mon. Guêpes Soc.* 58. 15.

Hab. North China (Shanghai).

18. **POLISTES SULCATUS.**

Polistes sulcatus, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 38.

Sauss. Mon. Guêpes Soc. 59. 16.

Hab. North China (Ning-Po-Foo).

This may possibly prove to be an extreme variety of *P. orientalis*.

19. **POLISTES PHILIPPINENSIS.** B.M.

Polistes philippinensis, *Sauss. Mon. Guêpes Soc.* 58. 14.

Hab. Philippine Islands.

20. **POLISTES MANILLENSIS.** B.M.

Polistes manillensis, *Sauss. Mon. Guêpes Soc.* 70. 30.

Hab. Philippine Islands.

Div. IV.—*Species of Africa and Madagascar.*

21. **POLISTES FLAVIPENNIS.**

Polistes flavipennis, *Sauss. Mon. Guêpes Soc.* 52. 7.

Hab. Cape of Good Hope.

22. **POLISTES RUBIDUS.**

Polistes rubidus, *St. Farg. Hym.* i. 523. 8 ♂.

Sauss. Mon. Guêpes Soc. 50. 4.

Hab. Cape of Good Hope.

23. **POLISTES FASTIDIOSUS.** B.M.

Polistes fastidiosus, *Sauss. Mon. Guêpes Soc.* 60. 18.

Hab. Gambia. (Coll. Lieut. Rendall.)

24. **POLISTES SMITHII.** B.M.

Polistes smithii, *Sauss. Mon. Guêpes Soc.* 60. 17. t. 7. f. 3.

Hab. Gambia; South Africa. (Coll. Dr. Andrew Smith.)
Sierra Leone. (Coll. The Rev. D. F. Morgan.)

25. *POLISTES MARGINALIS.*

B.M.

Vespa marginalis, *Fabr. Syst. Ent.* 367. 24; *Spec. Ins.* i. 463. 29; *Mant. Ins.* i. 289. 34; *Ent. Syst.* ii. 264. 42.

Christ. Hym. 240.

Oliv. Encycl. Méth. vi. 685. 79.

Polistes marginalis, *Fabr. Syst. Piez.* 272. 17.

Sauss. Mon. Guêpes Soc. 62. 20. t. 6. f. 2.

Polistes Africana, *Palis. de Beauv. Ins. d'Afr. et d'Amér.* 207. t. 8. f. 4.

Polistes ornata, *St. Farg. Hym.* i. 531. 19.

Hab. Africa; South Africa. (Coll. Dr. Andrew Smith.) Sierra Leone. (Coll. The Rev. D. F. Morgan.)

26. *POLISTES MADECASSUS.*

Polistes Madecassus, *Sauss. Mon. Guêpes Soc.* 51. 6.

Hab. Madagascar.

DIV. V.—*Species of Australia and Tasmania.*27. *POLISTES SCHACH.*

Vespa Schach, *Fabr. Spec. Ins.* i. 461. 18; *Mant. Ins.* i. 288. 21; *Ent. Syst.* ii. 260. 25.

Oliv. Encycl. Méth. vi. 682. 60.

Polistes Schach, *Fabr. Syst. Piez.* 270. 2.

Sauss. Mon. Guêpes Soc. 50. 3.

Hab. New Holland.

28. *POLISTES FACILIS.*

Polistes facilis, *Sauss. Mon. Guêpes Soc.* 53. 9.

Hab. New Holland.

29. *POLISTES SYNÆCUS.*

Polistes synæcus, *Sauss. Mon. Guêpes Soc.* 65. 22. t. 6. f. 5.

Hab. New Holland.

30. *POLISTES TASMANIENSIS.*

B.M.

Polistes Tasmaniensis, *Sauss. Mon. Guêpes Soc.* 66. 23. t. 6. f. 6.

Hab. New Holland (Hunter River).

31. *POLISTES VARIABILIS.*

Vespa variabilis, *Fabr. Ent. Syst.* ii. 274. 73.

Oliv. Encycl. Méth. vi. 690. 104.

Polistes variabilis, *Fabr. Syst. Piez.* 273. 20.

Sauss. Mon. Guêpes Soc. 66. 24.

Hab. New Holland. (Coll. Banks. Mus. Linn. Soc.)

32. *POLISTES TRICOLOR.*

B.M.

Polistes tricolor, *Sauss. Mon. Guêpes Soc.* 67. 25.

Hab. New Holland.

33. *POLISTES TEPIDUS.*

B.M.

Vespa tepida, *Fabr. Syst. Ent.* 366. 17; *Spec. Ins.* i. 462. 21;

Ent. Syst. ii. 262. 31; *Mant. Ins.* i. 289.

Christ. Hym. 242.

Oliv. Encycl. Méth. vi. 682. 64.

Polistes tepida, *Fabr. Syst. Piez.* 271. 7.

Polistes tepidus, *Sauss. Mon. Guêpes Soc.* 68. 27. t. 8. f. 1.

Hab. New Holland; New Guinea; Solomon Islands. (Voyage of H.M.S. Herald.)

34. *POLISTES PICTETI.*

B.M.

Polistes Picteti, *Sauss. Mon. Guêpes Soc.* 69. 28. t. 6. f. 8.

Hab. New Holland; Ceram. (Coll. Madame Ida Pfeiffer.)

35. *POLISTES BERNARDII.*

Polistes Bernardii, *Guillou, Ann. Soc. Ent. Fr.* 1st ser. x. 321.

Sauss. Mon. Guêpes Soc. 70. 29.

Hab. Australia.

36. *POLISTES HUMILIS.*

B.M.

Vespa humilis, *Fabr. Spec. Ins.* i. 461. 20; *Mant. Ins.* i. 288. 23;

Ent. Syst. ii. 261. 28.

Oliv. Encycl. Méth. vi. 682. 62.

Polistes humilis, *Fabr. Syst. Piez.* 270. 5.

Sauss. Mon. Guêpes Soc. 52. 8.

Hab. Tasmania; New Holland (Port Stephen).

Div. VI.—Species of Brazil, Cayenne, South America, Cuba.

37. *POLISTES ATERRIMUS.*

Polistes aterrimus, *Sauss. Mon. Guêpes Soc.* 73. 33.

Hab. Brazil (Amazons). (Coll. J. S. Baly, Esq.)

38. **POLISTES MELANOSOMA.**

B.M.

Polistes melanosoma, *Sauss. Mon. Guêpes Soc.* 76. 36.*Hab.* Brazil (Goyaz).39. **POLISTES SPINOLÆ.***Polistes Spinolæ*, *Sauss. Mon. Guêpes Soc.* 80. 43.*Hab.* Brazil.40. **POLISTES PACIFICUS.***Polistes pacificus*, *Fabr. Syst. Piez.* 274. 28.*Sauss. Mon. Guêpes Soc.* 84. 46.*Hab.* Para.41. **POLISTES BINOTATUS.***Polistes binotatus*, *Sauss. Mon. Guêpes Soc.* 87. 50. t. 7. f. 6.*Hab.* Brazil.42. **POLISTES OPALINUS.***Polistes opalinus*, *Sauss. Mon. Guêpes Soc.* 89. 52. t. 12. f. 6.*Hab.* Brazil.43. **POLISTES CINERASCENS.***Polistes cinerascens*, *Sauss. Mon. Guêpes Soc.* 99. 61. t. 10. f. 4.*Hab.* Brazil.44. **POLISTES SUBSERICEUS.**

B.M.

Polistes subsericeus, *Sauss. Mon. Guêpes Soc.* 100. 62. t. 12. f. 7.*Hab.* Brazil.45. **POLISTES LILIACEUSCULUS.***Polistes liliaceusculus*, *Sauss. Mon. Guêpes Soc.* 98. 59.*Hab.* Para.46. **POLISTES LILIACIOSUS.**

B.M.

Polistes liliaciosus, *Sauss. Mon. Guêpes Soc.* 97. 58. t. 11. f. 7.*Hab.* Brazil.

47. POLISTES CAVAPYTA.

Polistes Cavapyta, *Sauss. Mon. Guêpes Soc.* 87. 51. t. 11. f. 8.

Hab. La Plata.

48. POLISTES BICOLOR.

B.M.

Polistes bicolor, *St. Farg. Hym.* i. 521. 4.

Sauss. Mon. Guêpes Soc. 76. 37.

Hab. Cayenne; Surinam.

49. POLISTES ANALIS.

B.M.

Vespa analis, *Fabr. Ent. Syst. Supp.* 261. 40.

Polistes analis, *Fabr. Syst. Piez.* 272. 15.

Sauss. Mon. Guêpes Soc. 80. 42.

Hab. Cayenne.

50. POLISTES VERSICOLOR.

B.M.

Vespa versicolor, *Oliv. Encycl. Méth.* vi. 692. 114.

Vespa myops, *Fabr. Ent. Syst. Supp.* 261. 40.

Polistes myops, *Fabr. Syst. Piez.* 272. 16.

Sauss. Mon. Guêpes Soc. 81. 44. t. 7. f. 5, t. 8. f. 6. (var.)

Var. Specimens from St. Domingo in the British Museum are much more highly coloured than any described; the metathorax is almost entirely yellow, and the abdominal segments have broad continuous yellow bands.

Hab. Cayenne; Brazil (Amazons); St. Domingo.

51. POLISTES CRINITA.

B.M.

Vespa crinita, *Felton, Phil. Trans.* liv. 53. t. 6 (1773).

Vespa Americana, *Fabr. Syst. Ent.* 370. 38; *Spec. Ins.* i. 467. 52;

Mant. Ins. i. 292. 64; *Ent. Syst.* ii. 276. 81.

Christ. Hym. 243.

Oliv. Encycl. Méth. vi. 691. 111.

Vespa tricolor, *Fabr. Syst. Ent.* 369. 32; *Spec. Ins.* i. 465. 43;

Mant. Ins. i. 291. 52; *Ent. Syst.* ii. 271. 67; *Syst. Piez.* 266. 70.

Christ. Hym. 225.

Oliv. Encycl. Méth. vi. 689. 58.

Polistes Billardieri, *Fabr. Syst. Piez.* 274. 26.

Vespa multicolor, *Oliv. Encycl. Méth.* vi. 691. 113.

Polistes Americana, *Fabr. Syst. Piez.* 275. 29.

Sauss. Mon. Guêpes Soc. 93. 55. t. 11. f. 4, 5.

Hab. Cayenne.

52. *POLISTES ACTÆON*.

Polistes Actæon, *Halid. Trans. Linn. Soc. Lond.* xvii. 323. 32.
Sauss. Mon. Guêpes Soc. 98. 60. t. 11. f. 2.

Hab. Cayenne; Columbia.

53. *POLISTES FERRERI*.

Polistes Ferreri, *Sauss. Mon. Guêpes Soc.* 77. 39.

Hab. South America.

54. *POLISTES RUFICORNIS*.

Polistes ruficornis, *Sauss. Mon. Guêpes Soc.* 85. 48. t. 11. f. 3.

Hab. South America.

55. *POLISTES BIGUTTATUS*.

Polistes biguttatus, *Halid. Trans. Linn. Soc. Lond.* xvii. 323. 30.
Sauss. Mon. Guêpes Soc. 86. 49.

Hab. South America.

56. *POLISTES CARNIFEX*.

B.M.

Vespa carnifex, *Fabr. Syst. Ent.* 365. 4; *Spec. Ins.* i. 461. 16;
Mant. Ins. i. 288. 19; *Ent. Syst.* ii. 260. 23.

Christ. Hym. 239.

Oliv. Encycl. Méth. vi. 681. 58.

Polistes carnifex, *Fabr. Syst. Piez.* 272. 13.

Sauss. Mon. Guêpes Soc. 90. 53. t. 10. f. 5.

Polistes rufipennis, *Latr. Voy. Humb. et Bonpl. Ins.* ii. t. 79.
 no. 133. t. 38. f. 4.

Polistes major, *Palis. de Beauv. Ins. d'Afr. et Amér.* 206. t. 8. f. 1.

Polistes chlorostoma, *St. Farg. Hym.* i. 521. 5.

Polistes onerata, *St. Farg. Hym.* i. 524. 11.

Polistes valida, *Say, North Amer. Hym.* 389. 3.

Polistes transversosignatus, *Spin. Voy. Entom. de Ghill.* 62.

Hab. St. Domingo; Mexico; South America.

57. *POLISTES LINEATUS*.

Vespa lineata, *Fabr. Spec. Ins.* i. 461. 15; *Mant. Ins.* i. 288. 17;
Ent. Syst. ii. 259. 20.

Oliv. Encycl. Méth. vi. 581. 56.

Polistes lineata, *Fabr. Syst. Piez.* 271. 9.

Polistes lineatus, *Sauss. Mon. Guêpes Soc.* 95. 56. t. 11. f. 6.

Polistes Cubensis, *St. Farg. Hym.* i. 526. 13.

Hab. South America.

58. *POLISTES RUFIDENS.**Polistes rufidens*, *Sauss. Mon. Guêpes Soc.* 77. 38.*Hab.* Venezuela.DIV. VII.—*Species of Mexico and North America.*59. *POLISTES INSTABILIS.*

B.M.

Polistes instabilis, *Sauss. Mon. Guêpes Soc.* 91. 54. t. 10. f. 1, var. t. 11. f. 1.*Hab.* Mexico; East Florida; Mount Pleasant, Ohio. (Coll. E. Doubleday, Esq.) New York. (Coll. R. Foster, Esq.)60. *POLISTES EXILIS.**Polistes exilis*, *Sauss. Mon. Guêpes Soc.* 85. 47. t. 12. f. 5.*Hab.* North America.61. *POLISTES PALLIPES.*

B.M.

Polistes pallipes, *St. Farg. Hym.* i. 530. 18.*Sauss. Mon. Guêpes Soc.* 82. 45. t. 12. f. 1, 2, 3, 4.*Hab.* North and South America (East Florida; Ohio; Wilmington; Delaware). (Coll. E. Doubleday, Esq.)62. *POLISTES ANNULARIS.*

B.M.

Vespa annularis, *Linn. Syst. Nat.* i. 950. 9; *Amœnit. Acad.* vi. 413. 93.*Muell. Ed. Linn. Ins.* ii. 882. 9.*Fabr. Syst. Ent.* 366. 16; *Spec. Ins.* i. 461. 19; *Mant. Ins.* i. 288. 22; *Ent. Syst.* ii. 950. 9.*De Geer, Mém. Ins.* iii. 583. 7. t. 29. f. 11.*Oliv. Encycl. Méth.* vi. 682. 61.*Illig. Cent. Ins.* 30. no. 93.*Polistes annularis*, *St. Farg. Hym.* i. 522. 7.*Sauss. Mon. Guêpes Soc.* 79. 41. t. 8. f. 4.*Polistes cincta*, *St. Farg. Hym.* i. 522. 6.*Hab.* North and South America.63. *POLISTES AURIFER.*

B.M.

Polistes aurifer, *Sauss. Mon. Guêpes Soc.* 78. 40.*Hab.* California.

64. *POLISTES METRICUS.*

B.M.

Polistes metrica, *Say, Bost. Journ. Nat. Hist.* i. 388. 1.
Sauss. Mon. Guêpes Soc. 75. 35. t. 7. f. 4.

Hab. North America.

65. *POLISTES RUBIGINOSUS.*

B.M.

Polistes rubiginosus, *St. Farg. Hym.* i. 524. 10.
Sauss. Mon. Guêpes Soc. 74. 34.

Hab. Philadelphia.

66. *POLISTES CANADENSIS.*

B.M.

Vespa Canadensis, *Linn. Syst. Nat.* i. 952. 25.

De Geer, Ins. iii. 580. 3. t. 29. f. 7.

Sulz. Hist. Ins. t. 19. f. a.

Réaum. Mém. Ins. vi. 169. t. 17. f. 4.

Christ. Hym. 225.

Oliv. Encycl. Méth. vi. 684. 74.

Vespa marribosus, *Linn. Syst. Nat.* i. 952. 26.

Christ. Hym. 217.

Vespa nigripennis, *De Geer, Ins.* iii. 582. t. 29. f. 10.

Oliv. Encycl. Méth. vi. 684.

Vespa lanio, *Fabr. Syst. Ent.* 365. 15; *Spec. Ins.* i. 461. 17; *Mant.*

Ins. i. 288. 20; *Ent. Syst.* ii. 260. 24.

Oliv. Encycl. Méth. vi. 681. 59.

Polistes lanio, *Fabr. Syst. Piez.* 269. 1; *Smith, Trans. Ent. Soc.*

Lond. new ser. i. 176. t. 16. f. 1.

Polistes infuscata, *St. Farg. Hym.* i. 520. 2.

Polistes unicolor, *St. Farg. Hym.* i. 520. 3.

Polistes erythrocephala, *Latr. Voy. Humb. et Bonpl. Ins.* ii. 96.
 no. 132. t. 38. f. 3.

Polistes Canadensis, *Sauss. Mon. Guêpes Soc.* 72. 32. t. 1. f. 1.

Hab. North and South America.

67. *POLISTES OCLATUS.*

B.M.

Male. Length 7 lines.—Black: the head and thorax densely covered with short fulvous pubescence; the face as high as the emargination of the eyes, the mandibles, outer orbits of the eyes, and the scape in front, yellow; the flagellum ferruginous above, with the two basal joints as well as the scape above, fuscous; the eyes very large, prominent, and approximating more than is usual in this genus. Thorax: a narrow line on the prothorax in front, a similar one on the posterior margin, a spot beneath the wings, the pectus, coxæ and femora in front, the tegulæ, two

obscure spots on the scutellum, and two narrow longitudinal lines on the metathorax, yellow; the metathorax is delicately striated transversely and has a deeply impressed fovea in the middle; the legs ferruginous, with the intermediate and posterior coxæ and femora, and also the posterior tibiæ behind, black. Abdomen ferruginous, with the base of the first and second segments black; their apical margins with a narrow yellow fascia; beneath, the margins of all the segments with a yellow fascia.

Hab. Mexico.

68. POLISTES MINOR.

Polistes minor, *Palis. de Beauv. Ins. d'Afr. et d'Amér.* 207. t. 8. f. 3.

Sauss. Mon. Guêpes Soc. 96. 57. t. 11. f. 3.

Polistes Poeyi, *St. Farg. Hym.* i. 532. 20.

Hab. Cuba.

Genus 7. APOICA.

Vespa, pt., *Oliv. Encycl. Méth. Ins.* vi. 675 (1791).

Polistes, pt., *Fabr. Syst. Piez.* 276 (1804).

Apoica, *St. Farg. Hym.* i. 536 (1836).

1. APOICA PALLIDA.

B.M.

Vespa pallida, *Oliv. Encycl. Méth. Ins.* vi. 675. 26.

Polistes pallens, *Fabr. Syst. Piez.* 276. 35.

Apoica pallida, *St. Farg. Hym.* i. 538. 2.

Sauss. Mon. Guêpes Soc. 107. 1. t. 18. f. 1.

Hab. Brazil (Para); South America; Cayenne; Buenos Ayres.

2. APOICA VIRGINEA.

B.M.

Polistes virginea, *Fabr. Syst. Piez.* 277. 37.

Apoica bilineolata, *St. Farg. Hym.* i. 537. 1.

Apoica virginea, *Sauss. Mon. Guêpes Soc.* 107. 2. t. 18. f. 2.

Hab. South America.

3. APOICA ARBOREA.

Apoica arborea, *Sauss. Mon. Guêpes Soc.* 108. 3. t. 26. f. 1.

Hab. South America. (Coll. J. S. Baly, Esq.)

4. APOICA CUBITALIS.

Apoica cubitalis, *Sauss. Mon. Guêpes Soc.* 109. 4. t. 18. f. 3.

Hab. Bahia.

Genus 8. VESPA.

Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).

Crabro, pt., *Christ. Hym.* 217 (1791).

Sphex, pt., *Sulz. Hist. Ins.* (1761).

DIV. I.—*Species of Europe.*

1. VESPA VULGARIS.

B.M.

Vespa vulgaris, *Linn. Faun. Suec.* 415. no. 1671; *Syst. Nat.* i. 949. 4; ♀. *Mus. Linn. Soc.*

Scop. Ent. Carn. 825.

De Geer, Ins. ii. pt. 2. 766. t. 26. f. 1-15.

Fabr. Syst. Ent. 364. 9; *Spec. Ins.* i. 460. 9; *Mant. Ins.* i. 287. 10; *Ent. Syst.* ii. 256. 10; *Syst. Piez.* 255. 9.

Muell. Faun. Fried. no. 635.

Harris, Expos. Engl. Ins. 128. t. 37. f. 5.

Frisch, Ins. ix. t. 12. f. 2.

Schrank, Enum. Ins. Austr. no. 787.

Schæff. Elem. Ins. t. 130; *Icon. Ins.* t. 35. f. 4.

Fourc. Ent. Par. ii. 430. 2.

Villers, Entom. iii. 263. 2.

Rossi, Faun. Etrus. ii. 83. 861.

Christ. Hym. 236. t. 22. f. 2.

Panz. Faun. Germ. 49. 19.

Don. Brit. Ins. vii. t. 266.

Latr. Ann. Mus. Hist. Nat. i. 288; *Hist. Nat. des Crust. et Ins.* xiii. 351. 3.

Zett. Ins. Lapp. 453. 2.

Walck. Faun. Par. ii. 91. 4.

Bing. Anim. Biog. iii. 341.

Stew. Elem. Nat. Hist. ii. 238.

Lamarck, Hist. Nat. Anim. sans Vert. iv. 88. 2.

Samouelle, Compend. 280. 2.

Kirby & Spence, Introd. Ent. ii. 106.

Kirby, Faun. Bor. Amer. 263?

Brullé, Hist. Nat. Il. Canar. ii. pt. 2. 89.

St. Farg. Hym. i. 516. 14. t. 10.

Herr.-Schæff. Faun. Germ. 179. 3 a. p. 36.

Smith, Zool. i. 162. f. 2 a-f.

Blanch. Hist. des Ins. i. 62. t. 3. f. 3.

Sauss. Mon. Guêpes Soc. 113. t. 14. f. 3, 3 a-e.

Vespa Saxonica, *Fabr. Ent. Syst.* ii. 256. 12 ♂?

Aristot. Hist. An. i. ix. 41.

Plin. Hist. Nat. i. xi. c. 21.

Aldrov. Ins. 198.

- Vespa Saxonica*, *Schwenkf.* (*Vespa major*) *Theriotr. Siles.* 561.
Swammerd. Bibl. Nat. t. 26. f. 8.
Mouff. Theat. Ins. 52. f. 1, 2.
Ray (*Vespa sylvestris*), *Ins.* 252.
Cloquet (Guêpe commune), *Faune des Médec.* v. 302. 304. 305.

Hab. Europe.

Probably many of the above quotations refer to the *V. Germanica*, which has been usually regarded as a variety of *V. vulgaris*, but it is impossible to determine this point satisfactorily.

2. VESPA GERMANICA.

B.M.

- Vespa vulgaris*, *Muell. Edit. Linn. Ins.* ii. 880. 4. t. 27. f. 3.
Blanch. Règne Anim. t. 124. f. 5.
Smith, Zool. i. 162. 2f, a—f. (var.)
Vespa maculata, *Scop. Ent. Carn.* no. 831?
Christ. Hym. 240.
Vespa Germanica, *Fabr. Ent. Syst.* ii. 256. 12 ♂; *Syst. Piez.* 256. 10.
St. Farg. Hym. i. 515. 13.
Panz. Faun. Germ. 49. 20 ♀.
Herr.-Schæff. Faun. Germ. 179. 2. p. 35.
Smith, Zool. ix.; *Append. clxxvii.*
Sauss. Mon. Guêpes Soc. 116. 3. t. 14. f. 4, 4 a—c.

Hab. Europe.

3. VESPA RUFÆ.

B.M.

- Vespa rufa*, *Linn. Faun. Suec.* no. 1672; *Syst. Nat.* 949. 5.
Fabr. Syst. Ent. 364. 10; *Spec. Ins.* i. 460. 11; *Mant. Ins.* i. 388. 12; *Ent. Syst.* ii. 258. 15; *Syst. Piez.* 256. 13.
Muell. Faun. Friedr. no. 636.
Sulzer, Gesch. Ins. t. 27. f. 13.
Schrank, Ins. Austr. 788.
Villers, Ent. iii. 264. 3.
Oliv. Encycl. Méth. vi. 680. 51.
Christ. Hym. 236. t. 22. f. 3.
Latr. Hist. Nat. des Crust. et Ins. xiii. 352. 5.
Zett. Ins. Lapp. 454. 4.
St. Farg. Hym. i. 517. 15.
Curtis, Brit. Ent. xvi. t. 760.
Herr.-Schæff. Faun. Germ. 179. 5. p. 37.
Blanch. Hist. des Ins. 62. t. 3. f. 1.
Smith, Zool. i. 167. 3f, g, h, i.
Ménétr. Mém. Acad. Imp. des Sc. de St. Péters. vi. 304 (1848).
Sauss. Mon. Guêpes Soc. 120. 4. t. 14. f. 5, 5 a.
Ray (*Vespa sylvestris*, *vulgari similis*, &c.), *Ins.* 252.

Hab. Europe.

4. *VESPA ARBOREA.*

B.M.

Vespa borealis, *Smith*, *Zool.* i. 176. 6 (nec Kirby, nec Zett.).*Vespa arborea*, *Smith*, *Zool.* vii.; *Supp.* lx.*Sauss. Mon. Guêpes Soc.* 122. 5. t. 14. f. 8, 8 a.*Hab.* Britain; Switzerland.5. *VESPA SYLVESTRIS.*

B.M.

Vespa sylvestris, *Scop. Ent. Carn.* 826.*Villers, Entom.* iii. 274. 18.*Christ. Hym.* 235. t. 22. f. 1 a, b.*Oliv. Encycl. Méth.* vi.*Smith, Cat. Brit. Ent.* 49. 5.*Sauss. Mon. Guêpes Soc.* 123. 6. t. 14. f. 6.*Vespa holsatica*, *Fabr. Ent. Syst.* ii. 257. 14; *Syst. Piez.* 256. 12.*Latr. Ann. Mus. Hist. Nat.* i. 288. t. 21. f. 1-3; *Hist. Nat. Crust. et Ins.* xiii. 352.*Smith, Zool.* i. 168. 4. f. k, l, m.*Vespa crassa*, *Herr.-Schæff. Faun. Germ.* 179. 4. p. 34.*Vespa arbustorum*, *Blanch. Hist. des Ins.* i. 62. t. 3. f. 2.*Hab.* Europe.6. *VESPA SAXONICA.*

B.M.

Vespa Saxonica, *Fabr. Ent. Syst.* ii. 256. 12; *Syst. Piez.* 256. 11.*Panz. Faun. Germ.* 49. 21.*Herr.-Schæff. Faun. Germ.* 179. 37.*Sauss. Mon. Guêpes Soc.* 126. 7.*Vespa sexcincta*, *Panz. Faun. Germ.* 63. 1.*Herr.-Schæff. Faun. Germ.* 149. 36.*Vespa vulgaris*, *Linn.* (var. ♂?)*Hab.* Europe.7. *VESPA NORWEGICA.*

B.M.

Vespa Norwegica, *Fabr. Spec. Ins.* i. 460. 11; *Mant. Ins.* i. 288.13; *Ent. Syst.* ii. 258. 16; *Syst. Piez.* 256. 14.*Gmelin, Edit. Linn.* i. 2751. 41.*Villers, Entom.* iii. 275. 20.*Oliv. Encycl. Méth.* vi. 680. 52.*Panz. Faun. Germ.* 81. 16.*Zett. Ins. Lapp.* 454. 5.*Herr.-Schæff. Faun. Germ.* 37.*Smith, Zool.* x. 370. 1.*Sauss. Mon. Guêpes Soc.* 128. 8. t. 14. f. 7.

Vespa Britannica, Leach, *Zool. Miscel.* i. 112. t. 50. f. 1 ♂, 2 ♀, 3 ♀.

Sam. Compend. i. 43.

Steph. Syst. Cat. 370. 50. 33.

Smith, Zool. i. 169. 5.

Vespa borealis, Zett. *Ins. Lapp.* 454.

Hab. Europe.

Note.—M. Saussure considers the *Vespa Britannica* of Leach synonymous with *V. sylvestris*; that this is an error, is proved by an examination of the identical specimens, which are figured in the 'Zoological Miscellany;' the specimen of the female is one having only a slight tinge of red on each side of the second segment of the abdomen, which is the characteristic of a large majority of the British examples of this sex of the species, but it is not indicated in the figure; in the figure of the male the rufous spot is omitted; but in that of the worker, the black band on the second segment is obliterated on each side, leaving only the transverse black stripe so characteristic of the species: the specimens figured by Dr. Leach are in the collection of the British Museum, and each one has the name *Britannica*, in Leach's handwriting, attached to the specimen; this places the matter beyond a doubt. It may also be well to mention the fact, that in a whole brood of *Vespa Norwegica* obtained from the North of England, not more than a dozen of the females had the red spot at the sides of the second abdominal segment; in *Vespa Norwegica* the second black band is not produced into an angular point on its lower margin in the middle, but in *Vespa sylvestris* it is always so.

8. VESPA MEDIA.

Vespa media, De Geer, *Mém. Ins.* ii. 790. t. 27. f. 2-7.

Oliv. Encycl. Méth. vi. 679. 49.

Latr. Hist. Nat. des Crust. et Ins. xiii. 351.

Sauss. Mon. Guêpes Soc. 129. 9. t. 14. f. 9.

Vespa Crabro medius, Villers, *Linn. Ent.* iii. 273. 17.

Vespa Austriaca, Panz. *Faun. Germ.* 63. t. 2 a (var.).

Vespa Geerii, St. Farg. *Hym.* i. 510.

Hab. North of Europe.

9. VESPA CRABRO.

B.M.

Vespa Crabro, Linn. *Faun. Suec.* no. 1670; *Syst. Nat.* i. 948. 3.

De Geer, Ins. ii. 801. t. 27.

Mueller, Edit. Linn. Ins. ii. 880. 3.

Gmelin, Edit. Linn. i. 2750. 3.

Vespa Crabro, *Fabr. Syst. Ent.* 364. 8; *Spec. Ins.* i. 459. 8; *Mant.*

Ins. i. 287. 9; *Ent. Syst.* ii. 255. 9; *Syst. Piez.* 255. 8.

Muell. Faun. Friedr. 634.

Scop. Ent. Carn. no. 824.

Harris, Expos. Engl. Ins. 127. t. 24. f. 1, 2, 3.

Schränk, Ins. Austr. 786.

Fourc. Ent. Par. ii. 430. 1.

Schæff. Icon. Ins. Ratisb. t. 53. f. 5, t. 136. f. 3.

Poda, Mus. Græc. 108.

Villers, Ent. iii. 262. 1.

Rossi, Faun. Etrus. ii. 83. 860.

Christ. Hym. 215. t. 18. f. 3.

Don. Brit. Ins. xiv. 85. t. 502.

Walcken. Faun. Par. ii. 90.

Latr. Hist. Nat. des Crust. et Ins. xiii. 350.

Imhoff, Ins. der Schweiz, i. iii. f. 1.

Zett. Ins. Lapp. 435. 1.

St. Farg. Hym. i. 509. 7. t. 9. f. 1-3.

Smith, Cat. Brit. Hym. 48. 1.

Sauss. Mon. Guêpes Soc. 130. 10.

Aldrov. Ins. 225.

Swammerd. Bibl. Nat. t. 26. f. 9.

Ray (*Crabro vulgaris* and congener), *Ins.* 249 & 250.

Geoff. Ins. ii. 360. 1.

Réaumur. Mém. Ins. vi. 215. t. 48. f. 1. 4-10. & iv. t. 10. f. 9.

Le Guêpe frelon, *Cloquet, Faune des Médecins*, v. 304. 1. t. 3. f. 5.

Hab. Europe.

10. *VESPA ORIENTALIS.*

B.M.

Vespa orientalis, *Linn. Syst. Nat. Mant.* 540.

Fabr. Syst. Ent. 363. 3; *Spec. Ins.* i. 458. 3; *Mant. Ins.* i.

287. 4; *Ent. Syst.* ii. 254. 4; *Syst. Piez.* 254. 4.

Gmelin, Ed. Linn. i. 2748. 31.

Oliv. Encycl. Méth. vi. 677. 41.

Christ. Hym. 237.

St. Farg. Hym. i. 507. 5.

Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters. vi. 304.

976 (1849).

Sauss. Mon. Guêpes Soc. 132. 11.

Vespa turcica, *Drury, Illustr. Exot. Ins.* ii. t. 39. f. 1.

Vespa fusca, *Christ. Hym.* 216.

Vespa ægyptiaca, *Vallot, Tabl. de Réaumur.* 170.

Vespa nilotica, *Vallot, Tabl. de Réaumur.* 170.

Savigny, Descr. de l'Egypt. Hym. pl. 8. f. 1.

Hab. South of Europe; Greece (Albania); Turkey; Egypt; India (Punjaub).

11. *VESPA JURINEI.*

B.M.

Vespa Jurinei, *Sauss. Mon. Guêpes Soc.* 133. 12.*Hab.* Albania.Div. II.—*Species of Asia, India, China, Java, Philippine Islands.*12. *VESPA CINCTA.*

B.M.

Vespa cincta, *Fabr. Syst. Ent.* 362. 1; *Spec. Ins.* i. 458. 1; *Mant. Ins.* i. 287. 6; *Ent. Syst.* ii. 254. 6; *Syst. Piez.* 254. 6.*Gmelin, Edit. Linn.* i. 2748. 23.*Oliv. Encycl. Méth. Ins.* vi. 676. 37.*Christ. Hym.* 219.*St. Farg. Hym.* 505. 1.*Sauss. Mon. Guêpes Soc.* 152. 37.*Sphex tropica*, *Sulz. Hist. Ins.* t. 27. f. 5.*Vespa unifasciata*, *Oliv. Encycl. Méth.* vi. 677. 39.*Vespa tenebrionis*, *Christ. Hym.* 216.*Hab.* India; China; Java; Sumatra.13. *VESPA AFFINIS.*

B.M.

Vespa affinis, *Fabr. Mant. Ins.* i. 287. 2; *Ent. Syst.* ii. 253. 2; *Syst. Piez.* 254. 2.*Gmelin, Edit. Linn.* i. 2748. 29.*Oliv. Encycl. Méth.* vi. 677. 38.*St. Farg. Hym.* i. 506. 2.*Sauss. Mon. Guêpes Soc.* 154. 39.*Hab.* India; China.14. *VESPA ANALIS.*

B.M.

Vespa analis, *Fabr. Syst. Ent.* 365. 5; *Spec. Ins.* i. 459. 5; *Mant. Ins.* i. 287. 6; *Ent. Syst.* ii. 254. 6; *Syst. Piez.* 254. 6.*Gmelin, Edit. Linn.* i. 2749. 33.*Christ. Hym.* 218.*Oliv. Encycl. Méth.* vi. 677. 43.*St. Farg. Hym.* i. 508. 6.*Sauss. Mon. Guêpes Soc.* 152. 36.*Crabro sphinx*, *Christ. Hym.* 217. t. 18. f. 5.*Hab.* India.15. *VESPA BICOLOR.*

B.M.

Vespa bicolor, *Fabr. Mant. Ins.* i. 288. 14; *Ent. Syst.* ii. 258. 17; *Syst. Piez.* 257. 15.

Vespa bicolor, *Gmelin, Edit. Linn.* i. 2750. 40.

Oliv. Encycl. Méth. vi. 680. 53.

St. Farg. Hym. i. 512. 10.

Sauss. Mon. Guêpes Soc. 143. 25.

Hab. India; China.

16. *VESPA VELUTINA.*

B.M.

Vespa velutina, *St. Farg. Hym.* i. 507. 4.

Sauss. Mon. Guêpes Soc. 144. 26.

Hab. India; Java; China.

17. *VESPA AURARIA.*

B.M.

Vespa auraria, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 46.
t. 8. f. 8.

Sauss. Mon. Guêpes Soc. 147. 29.

Hab. Northern India.

18. *VESPA OBLITERATA.*

B.M.

Vespa obliterata, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 47.

Sauss. Mon. Guêpes Soc. 149. 32.

Hab. Northern India.

This species will in all probability prove to be the worker of
Vespa basalis.

19. *VESPA BASALIS.*

B.M.

Vespa basalis, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 46.

Sauss. Mon. Guêpes Soc. 148. 31.

Hab. India (Nepaul).

20. *VESPA MAGNIFICA.*

B.M.

Vespa magnifica, *Smith, Trans. Ent. Soc. Lond.* new ser. i. 45.

Sauss. Mon. Guêpes Soc. 155. 40. t. 13. f. 3 ♀.

Hab. India (Nepaul, Landoor).

21. *VESPA TYRANNICA.*

B.M.

Worker or female. Length $9\frac{1}{4}$ lines.—Black: the head and thorax with a thin black pubescence; covered with fine changeable velvety pile; the clypeus emarginate in front, the angles of the emargination rounded; the mandibles, cheeks, clypeus, a trifid spot above and the inner orbit of the eyes, orange; tips of the mandibles and inner margin, black; the antennæ fulvous

beneath. The outer margin of the wing-scales testaceous; the wings yellowish, hyaline, and with a dark stain on the anterior margin of the superior pair towards their base; the nervures pale ferruginous, the costal nervure black; all the segments of the abdomen, except the basal one, broadly margined with yellow.

Hab. Singapore. (Coll. A. Wallace, Esq.)

This species somewhat resembles the *Vespa velutina*, from which it is distinguished by having a larger head, which is wider than the thorax; the basal segment of the abdomen is proportionably much longer, with its basal margin regularly rounded; and the antennæ are also shorter.

22. *VESPA DORYLLOIDES.*

B.M.

Vespa anomala, *Sauss. Mon. Guêpes Soc.* 112. 1. t. 14. f. 2.

Vespa dorylloides, *Sauss. Mon. Guêpes Soc. Supp.* 256.

Hab. Java; Tenasserim; East India; Sumatra.

23. *VESPA ALDUINI.*

Vespa Alduini, *Guérin, Voy. de la Coquille, Ins.* t. 9. f. 6.

Sauss. Mon. Guêpes Soc. 154. 38.

Vespa bimaculata, *Guérin, Voy. de la Coquille*, 264.

Hab. Java.

Probably a small variety of *V. cincta* (Saussure).

24. *VESPA BELLICOSA.*

B.M.

Vespa bellicosa, *Sauss. Mon. Guêpes Soc.* 146. 28. t. 14. f. 10.

Hab. Java.

25. *VESPA CRABRONIFORMIS.*

B.M.

Vespa crabroniformis, *Smith, Trans. Ent. Soc. Lond. new ser.* ii. p. 40.

Sauss. Mon. Guêpes Soc. 145. 27.

Hab. North China.

26. *VESPA MANDARINIA.*

B.M.

Vespa mandarinia, *Smith, Trans. Ent. Soc. Lond. new ser.* t. 8. f. 1.

Sauss. Mon. Guêpes Soc. 150. 34.

Hab. China (Shanghai). (Coll. R. Fortune, Esq.)

27. *VESPA DUCALIS*.

B.M.

Vespa ducalis, *Smith, Trans. Ent. Soc. Lond. new ser. ii. 39.**Sauss. Mon. Guêpes Soc. 151. 35.**Hab.* North China (Teing-Teing, near Ning-Po-Foo); Northern India.28. *VESPA NIGRIPENNIS*.

B.M.

Vespa nigripennis, *Sauss. Mon. Guêpes Soc. 156. 41.**Hab.* Philippine Islands.29. *VESPA DEUSTA*.*Vespa deusta*, *St. Farg. Hym. i. 506. 3.**Sauss. Mon. Guêpes Soc. 149. 33.**Hab.* Philippine Islands.30. *VESPA LUCTUOSA*.

B.M.

Vespa luctuosa, *Sauss. Mon. Guêpes Soc. 143. 24.**Hab.* Philippine Islands.31. *VESPA PHILIPPINENSIS*.

B.M.

Vespa Philippinensis, *Sauss. Mon. Guêpes Soc. 148. 30.**Hab.* Philippine Islands.DIV. III.—*Species of North America; Mexico.*32. *VESPA MACULATA*.

B.M.

Vespa maculata, *Linn. Syst. Nat. i. 948. 2; Amœn. Acad. vi. 412. 91.**Muell. Ed. Linn. Ins. ii. 880. 2.**Gmelin, Ed. Linn. i. 2749. 2.**Fabr. Syst. Ent. 364. 11; Spec. Ins. i. 460. 13; Mant. Ins. i. 288. 15; Ent. Syst. ii. 258. 18; Syst. Piez. 257. 17.**De Geer, Ins. iii. 584. 9. t. 29. f. 13.**Christ. Hym. 217.**Oliv. Encycl. Méth. vi. 681. 54.**Illig. Cent. Ins. Car. 29. 91.**Kirby, Faun. Boreal. Amer. 266.**St. Farg. Hym. i. 512. 9.**Sauss. Mon. Guêpes Soc. i. 141. 22.**Vespa maculata Americana*, *Christ. Hym. 239.**Hab.* North America.

33. *VESPA CAROLINA.*

B.M.

Vespa carolina, Drury, *Exot. Ins.* t. 44. f. 4.*Gmelin, Ed. Linn.* i. 2749. 1.*Fabr. Syst. Ent.* 363. 6; *Spec. Ins.* i. 459. 6; *Mant. Ins.* i. 278. 7; *Ent. Syst.* ii. 255. 9; *Syst. Piez.* 225. 7.*Muell. Ed. Linn.* ii. 879. 1.*Christ. Hym.* 217.*Oliv. Encycl. Méth.* vi. 678. 44.*St. Farg. Hym.* i. 513.*Sauss. Mon. Guêpes Soc.* 142. 23.*Hab.* North America.34. *VESPA ARENARIA.**Vespa arenaria*, *Fabr. Syst. Ent.* 365. 12; *Spec. Ins.* i. 461. 14;*Mant. Ins.* i. 288. 16; *Ent. Syst.* ii. 258. 19; *Syst. Piez.* 258. 20.*Oliv. Encycl. Méth.* vi. 681. 55.*Gmelin, Ed. Linn.* p. 2749. 34.*Vespa marginata*, Kirby, *Faun. Boreal. Amer.* 256. t. 6. f. 2.*Hab.* North America.35. *VESPA DIABOLICA.**Vespa diabolica*, *Sauss. Mon. Guêpes Soc.* 138. 18.*Hab.* North America.36. *VESPA INFERNALIS.**Vespa infernalis*, *Sauss. Mon. Guêpes Soc.* 139. 19.*Hab.* North America.37. *VESPA BOREALIS.**Vespa borealis*, Kirby, *Faun. Boreal. Amer.* 264.*Hab.* North America.38. *VESPA CONSOBRINA.**Vespa consobrina*, *Sauss. Mon. Guêpes Soc.* 141. 21.*Hab.* Newfoundland.39. *VESPA SULPHUREA.*

B.M.

Vespa sulphurea, *Sauss. Mon. Guêpes Soc.* 137. 17.*Hab.* California.40. *VESPA VIDUA.**Vespa vidua*, *Sauss. Mon. Guêpes Soc.* 156. 16.*Hab.* Carolina.

41. *VESPA CUNEATA.*

B.M.

Vespa cuneata, *Fabr. Syst. Piez.* 258. 21.*St. Farg. Hym.* i. 513. 12.*Hab.* Mexico.Genus 9. *SYNÆCA.**Vespa*, pt., *Linn. Syst. Nat.* i. 952 (1766).*Polistes*, pt., *Fabr. Syst. Piez.* 279 (1804).*Epipona*, pt., *Halid. Trans. Linn. Soc. Lond.* xvii. (1837).*Synæca*, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 552 (1852).1. *SYNÆCA SURINAMA.*

B.M.

Vespa Surinama, *Linn. Syst. Nat.* i. 952. 23.*Oliv. Encycl. Méth.* vi. 676.*Christ. Hym.* 215.*Vespa nigricornis*, *Oliv. Encycl. Méth.* vi. 615.*Polistes cærulea*, *Fabr. Syst. Piez.* 279. 46.*Synæca cærulea*, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 552.*Hab.* Cayenne.2. *SYNÆCA CYANEA.*

B.M.

Vespa cyanea, *Fabr. Syst. Ent.* 372. 45; *Spec. Ins.* i. 469. 64;*Mant. Ins.* i. 293. 78; *Ent. Syst.* ii. 282. 99.*Oliv. Encycl. Méth.* vi. 674.*Polistes cyanea*, *Fabr. Syst. Piez.* 279. 47.*Epipona cyanea*, *Halid. Trans. Linn. Soc. Lond.* xvii. 322. 27.*Synæca cyanea*, *Sauss. Mon. Guêpes Soc.* 159. 2.*Hab.* Cayenne.3. *SYNÆCA AZUREA.*

B.M.

Synæca azurea, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 554. 3;*Mon. Guêpes Soc.* 160. 3.*Hab.* Brazil; Bahia; Mexico.4. *SYNÆCA ULTRAMARINA.*

B.M.

Synæca ultramarina, *Sauss. Mon. Guêpes Soc.* 160. 4.*Hab.* Brazil (St. Catharine).5. *SYNÆCA VIOLACEA.**Synæca violacea*, *Sauss. Mon. Guêpes Soc.* 161. 5.*Hab.* Brazil (St. Catharine).

6. SYNÆCA CHALYBEA.

Synæca chalybea, *Sauss. Mon. Guêpes Soc.* 161. 6.

Hab. Cayenne.

7. SYNÆCA TESTACEA.

B.M.

Synæca testacea, *Sauss. Mon. Guêpes Soc.* 162. 7.

Hab. Brazil (Para).

Genus 10. POLYBIA.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).

Polistes, pt., *Fabr. Syst. Piez.* 269 (1804).

Rhopalidia, pt., *St. Farg. Hym.* i. 539 (1836).

Myrapetra, *White, Ann. & Mag. Nat. Hist.* vii. 320 (1841).

Polybia, *Sauss. Mon. Guêpes Soc.* 163 (1853).

1. POLYBIA APICIPENNIS.

Polistes apicipennis, *Spin. Voy. Ent. Ghil.* 59. 55.

Polybia apicipennis, *Sauss. Mon. Guêpes Soc.* 166. 1. t. 18. f. 6.

Hab. Para.

2. POLYBIA PICTETI.

Polybia picteti, *Sauss. Mon. Guêpes Soc.* 168. 2. t. 21. f. 2.

Hab. Columbia.

3. POLYBIA SEDULA.

B.M.

Polybia sedula, *Sauss. Mon. Guêpes Soc.* 169. 3. t. 21. f. 3. & f. 6
(the nest).

Hab. Bahia.

4. POLYBIA MINUTISSIMA.

Polybia minutissima, *Sauss. Mon. Guêpes Soc.* 170. 4.

Hab. South America.

5. POLYBIA LABORIOSA.

Polybia laboriosa, *Sauss. Mon. Guêpes Soc.* 171. 5.

Hab. Mexico.

6. POLYBIA SYLVEIRÆ.

B.M.

Polybia sylveiræ, *Sauss. Mon. Guêpes Soc.* 171. 6. t. 22. f. 2.

Hab. Brazil (Sylveira).

7. POLYBIA BIFASCIATA.

Polybia bifasciata, *Sauss. Mon. Guêpes Soc.* 172. 7. t. 22. f. 3.

Hab. Brazil.

8. POLYBIA QUADRICINCTA.

B.M.

Polybia quadricincta, *Sauss. Mon. Guêpes Soc.* 173. 8.

Hab. South America.

9. POLYBIA EXIGUA.

Polybia exigua, *Sauss. Mon. Guêpes Soc.* 173. 9. t. 22. f. 1.

Hab. Brazil.

10. POLYBIA LILIACEA.

B.M.

Polistes liliacea, *Fabr. Syst. Piez.* 271. 10.

Polybia liliacea, *St. Farg. Hym.* i. 533. 1.

Sauss. Mon. Guêpes Soc. 174. 10. t. 22. f. 7.

Hab. Cayenne.

11. POLYBIA SULCATA.

Polybia sulcata, *Sauss. Mon. Guêpes Soc.* 175. 11. t. 22. f. 4.

Hab. Brazil.

12. POLYBIA JURINEI.

B.M.

Polybia Jurinei, *Sauss. Mon. Guêpes Soc.* 176. 12. t. 22. f. 5.

Hab. Brazil.

13. POLYBIA DIMIDIATA.

B.M.

Vespa dimidiata, *Oliv. Encycl. Méth.* vi. 675. 28.

Polybia dimidiata, *Sauss. Mon. Guêpes Soc.* 177. 13.

Hab. Cayenne.

14. POLYBIA SOCIALIS.

Polybia socialis, *Sauss. Mon. Guêpes Soc.* 177. 14. t. 24. f. 1.

Hab. Brazil.

15. POLYBIA AURICHALCEA.

B.M.

Polybia aurichalcea, *Sauss. Mon. Guêpes Soc.* 178. 15.

Hab. Brazil.

16. POLYBIA CHRYSOTHORAX.

Vespa chrysothorax, *Weber, Obs. Ent.* 103. 9.

Polistes aurulenta, *Fabr. Syst. Piez.* 275. 31.

Polybia chrysothorax, *Sauss. Mon. Guêpes Soc.* 178. 16. t. 24. f. 3.

Hab. Cayenne; Brazil.

17. POLYBIA SERICEA.

B.M.

Vespa sericea, *Sauss. Oliv. Encycl. Méth. Ins.* 675. 29.

Rhopalidia rufithorax, *St. Farg. Hym.* i. 539. 1.

Polybia sericea, *Sauss. Mon. Guêpes Soc.* 179. 17. t. 24. f. 4.

Hab. Brazil (Para); Cayenne.

18. POLYBIA LUGUBRIS.

B.M.

Polybia lugubris, *Sauss. Mon. Guêpes Soc.* 180. 18. t. 24. f. 2.

Hab. Guiana.

19. POLYBIA REJECTA.

B.M.

Polybia rejecta, *Sauss. Mon. Guêpes Soc.* 180. 19. t. 22. f. 5.

Hab. Cayenne.

20. POLYBIA ATRA.

B.M.

Vespa atra, *Oliv. Encycl. Méth. Ins.* vi. 674. 20.

Polistes ignobilis, *Halid. Trans. Linn. Soc.* xvii. no. 28. t. 24. f. 5.

Polybia atra, *Sauss. Mon. Guêpes Soc.* 181. 20. t. 24. f. 5.

Hab. Brazil.

21. POLYBIA FASCIATA.

B.M.

Polistes fasciata, *St. Farg. Hym.* i. 534. 2 (not the synonym).

Polybia fasciata, *Sauss. Mon. Guêpes Soc.* 182. 21. t. 24. f. 6.

Hab. Panama.

22. POLYBIA FLAVICANS.

B.M.

Polistes flavicans, *Fabr. Syst. Piez.* 276. 33.

Polistes testacea, *Fabr. Syst. Piez.* 276. 34.

Polybia testacea, *Sauss. Mon. Guêpes Soc.* 183. 22. t. 23. f. 1.

Hab. South America.

23. POLYBIA ANGULICOLLIS.

B.M.

Polybia angulicollis, *Spin. Voy. Ent. Ghil.* 61.

Sauss. Mon. Guêpes Soc. 184. 23. 54. t. 23. f. 3.

Hab. Para.

24. POLYBIA ANGULATA.

B.M.

Polistes angulata, *Fabr. Syst. Piez.* 185. 24.*Polybia angulata*, *Sauss. Mon. Guêpes Soc.* 185. 24.*Hab.* Brazil.

25. POLYBIA PARAENSIS.

B.M.

Polistes Paraensis, *Spin. Voy. Ent. Ghil.* no. 57.*Polybia Paraensis*, *Sauss. Mon. Guêpes Soc.* 185. 25. t. 23. f. 2.*Hab.* Para.

26. POLYBIA PHTHISICA.

Vespa phtthisica, *Fabr. Ent. Syst.* ii. 281. 97.*Vespa Cajennensis*, *Fabr. Ent. Syst. Supp.* 265. 103.*Coqueb. Illustr. Icon. Ins.* 62. t. 15. f. 3.*Vespa ochrosticta*, *Weber, Obs. Entom.* 104. 10.*Vespa fasciata*, *Oliv. Encycl. Méth.* vi. 676. 35.*Polistes Cajennensis*, *Fabr. Syst. Piez.* 280. 54.*Polistes hectica*, *Fabr. Syst. Piez.* 278. 43.*Polistes fasciata*, *Oliv. Encycl. Méth.* x. 172. 4.*Polistes fulvo-fasciata*, *Latr. Gen. des Crust. et Ins.* iv. 142.*Polybia phtthisica*, *Sauss. Mon. Guêpes Soc.* 186. 26. t. 23. f. 7, 8.*Réaum. Mém. Ins.* vi. 207. t. 14. f. 8.*De Geer, Ins.* iii. 581. t. 29. f. 8.*Hab.* Cayenne; Brazil; St. Thomas.

27. POLYBIA MULTIPICTA.

Polistes multipictus, *Halid. Trans. Linn. Soc. Lond.* xvii. 322. 29.*Polybia multipicta*, *Sauss. Mon. Guêpes Soc.* 188. 27.*Hab.* Brazil (St. Paul).

28. POLYBIA PALLIPES.

Vespa pallipes, *Oliv. Encycl. Méth.* vi. 675. 30.*Rhopalidia pallens*, *St. Farg. Hym.* i. 539. 2.*Polybia pallipes*, *Sauss. Mon. Guêpes Soc.* 189. 28. t. 25. f. 2.*Hab.* Brazil; Cayenne.

29. POLYBIA VICINA.

Polybia vicina, *Sauss. Mon. Guêpes Soc.* 189. 29. t. 24. f. 7.*Hab.* Brazil.

30. POLYBIA ANCEPS.

B.M.

Polybia anceps, *Sauss. Mon. Guêpes Soc.* 190. 30.*Hab.* Brazil.

31. POLYBIA XANTHOPUS.

Polybia xanthopus, *Sauss. Mon. Guêpes Soc.* 190. 31.*Hab.* Mexico.

32. POLYBIA CONSTRUCTOR.

Polybia constructor, *Sauss. Mon. Guêpes Soc.* 191. 32. t. 23. f. 6.*Hab.* South America.

33. POLYBIA SCUTELLARIS.

B.M.

Myrapetra scutellaris, *White, Ann. & Mag. Nat. Hist.* vii. 315. t. 4. f. 4-7.*Polybia scutellaris*, *Sauss. Mon. Guêpes Soc.* 192. 33. t. 23. f. 4.*Hab.* Brazil.

34. POLYBIA PYGMÆA.

B.M.

Vespa pygmæa, *Fabr. Ent. Syst.* ii. 283. 102.*Polistes pygmæa*, *Fabr. Syst. Piez.* 280. 53.*Polybia pygmea*, *Sauss. Mon. Guêpes Soc.* 193. 34. t. 23. f. 5.*Hab.* Cayenne.

35. POLYBIA OCCIDENTALIS.

B.M.

Vespa occidentalis, *Oliv. Encycl. Méth.* vi. 675. 31.*Myraptera elegans*, *Curtis, Trans. Linn. Soc. Lond.* xix. 257. t. 31. f. 8, & 9 (the nest).*Polybia occidentalis*, *Sauss. Mon. Guêpes Soc.* 194. 35.*Hab.* Brazil.

36. POLYBIA PALLIDI-PECTUS.

B.M.

Male. Length $5\frac{1}{4}$ lines.—Black: the clypeus, face as high as the insertion of the antennæ, the scape in front, the mandibles and outer orbit of the eyes, sulphur-yellow; the flagellum beneath orange. Thorax: a narrow line on the anterior margin of the prothorax, another on its posterior margin, a similar narrow line at the base of the scutellum and post-scutellum, and also two lines running from the scutellum to the base of the posterior wings, yellow; two oblique lines at the base of the

metathorax, the pectus, the coxæ and femora in front, yellow; the tibiæ and tarsi ferruginous and more or less fuscous above; the wings hyaline, the anterior margins of the superior pair yellowish, with a fuscous cloud in the marginal cell, the nervures ferruginous. Abdomen: the petiole elongate, with its apical margin as well as that of the following segment with a yellow fascia; beneath, the abdomen is more or less ferruginous in the middle, the apical margin of all the segments yellow.

Hab. Mexico.

This is probably the male of *Polybia pediculata*.

37. POLYBIA INFERNALIS.

Polybia infernalis, *Sauss. Mon. Guêpes Soc.* 195. 36. t. 25. f. 3.

Hab. Para.

38. POLYBIA ŒCODOMA.

Polybia œcodoma, *Sauss. Mon. Guêpes Soc.* 195. 37. t. 25. f. 7.

Hab. Brazil (Bahia).

39. POLYBIA FASTIDIOSUSCULA.

B.M.

Polybia fastidiosuscula, *Sauss. Mon. Guêpes Soc.* 197. 39. t. 25. f. 4.

Hab. Brazil.

40. POLYBIA CARBONARIA.

Polybia carbonaria, *Sauss. Mon. Guêpes Soc.* 198. 40. t. 26. f. 5.

Hab. Brazil.

41. POLYBIA CORDATA.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the clypeus smooth and shining, its anterior margin forming an obtuse angle. The posterior margin of the prothorax, a connected oblique stripe beneath the wings, the posterior margin of the tegulæ, a minute spot at the lateral angles of the scutellum and the post-scutellum, yellow; the wings hyaline and iridescent, with a dark fuscous spot occupying the marginal cell and the apex of the externo-medial cell; the nervures dark towards the base of the wings and pale towards their apex. Abdomen heart-shaped; the first segment with a narrow yellow fascia on its apical margin, the following segments with a broad fascia; the fasciæ slightly notched in the middle and emarginate on each side; the fascia on the second

segment recurved at the sides and united to a large lateral spot at the base; all the fasciæ except that on the basal segment continued beneath.

Hab. Brazil (Amazons). (Coll. H. W. Bates.)

42. POLYBIA METATHORACICA. B.M.

Polybia metathoracica, *Sauss. Mon. Guêpes Soc.* 198. 41. t. 25. f. 1.

Hab. Cayenne.

43. POLYBIA FLAVITARSIS. B.M.

Polybia flavitarsis, *Sauss. Mon. Guêpes Soc.* 199. 42.

Hab. California.

44. POLYBIA INJUCUNDA.

Polybia injucunda, *Sauss. Mon. Guêpes Soc.* 200. 43. t. 25. f. 8.

Hab. Para.

45. POLYBIA INDETERMINABILIS.

Polybia indeterminabilis, *Sauss. Mon. Guêpes Soc.* 201. 45.

Hab. South America.

46. POLYBIA SURINAMENSIS.

Polybia Surinamensis, *Sauss. Mon. Guêpes Soc.* 200. 44.

Hab. Surinam; Brazil.

47. POLYBIA PARVULA.

Polistes parvula, *Fabr. Syst. Piez.* 280. 55.

Polybia parvula, *Sauss. Mon. Guêpes Soc.* 196. 38.

Hab. Mexico.

48. POLYBIA CUBENSIS. B.M.

Polybia Cubensis, *Sauss. Mon. Guêpes Soc.* 202. 46. t. 25. f. 5, 6.

Hab. Cuba.

49. POLYBIA MEXICANA.

Polybia Mexicana, *Sauss. Mon. Guêpes Soc.* 203. 47. t. 26. f. 6.

Hab. Mexico.

50. *POLYBIA RUFIDENS*.

Polybia rufidens, *Sauss. Mon. Guêpes Soc.* 204. 48.

Hab. Cayenne.

51. *POLYBIA RUFIGASTRA*.

Polybia rufigastrea, *Sauss. Mon. Guêpes Soc.* 204. 49.

Hab. America.

52. *POLYBIA PEDICULATA*.

Polybia pediculata, *Sauss. Mon. Guêpes Soc.* 205. 50. t. 26. f. 7.

Hab. Brazil.

53. *POLYBIA FILIFORMIS*.

Polybia filiformis, *Sauss. Mon. Guêpes Soc.* 206. 51. t. 26. f. 8.

Hab. Brazil.

54. *POLYBIA ALBO-PICTA*.

Female. Length 9 mill.—Black : the clypeus angular in front and of a yellowish white, a spot above the clypeus and a broad stripe at the inner orbit of the eyes of the same colour ; a white line behind the eyes. The posterior border of the prothorax, the tegulae, a line beneath the wings, the scutellum and post-scutellum with a minute spot on each side of both, and a large spot on each side of the metathorax, white ; the wings fusco-hyaline, the superior pair with a fuscous stain along their anterior margin, which entirely occupies the marginal cell ; the apical joints of the tarsi fusco-ferruginous. Abdomen : the apical margin of the basal petiolated segment with a broad white fascia ; the apical margins of the second and three following segments with a white border, the inner margin of which is more or less irregular.

Hab. Brazil. (Coll. W. Swainson, Esq.)

55. *POLYBIA BICOLOR*.

B.M.

Female. Length 10 mill.—Head and thorax black ; abdomen of a reddish brown ; the clypeus produced into an obtuse point anteriorly, with an impressed line at the apex ; the tips of the mandibles ferruginous. Thorax elongate-ovate, smooth and slightly shining above ; the posterior margin of the prothorax and the basal margin of the scutellum with a narrow yellow line ;

the wings hyaline, with a ferruginous tinge on the anterior margin of the superior pair; a dark fuscous cloud occupying the marginal cell and extending to the apex of the wing; the nervures ferruginous, becoming fuscous towards the apex of the wings. Abdomen: the petiolated basal segment rather darker than the following segments, its apical margin with a narrow yellow border; the following segments have a narrow pale fascia on their apical margins, beneath, but on the upper surface the fasciæ are scarcely distinguishable.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

56. *POLYBIA DILIGENS*.

B.M.

Female. Length 6 mill.—Black, decorated with yellowish-white markings: the clypeus, sides of the face, two united spots above the insertion of the antennæ, and a narrow line at the outer orbits of the eyes, yellow; the clypeus with a black stripe down the middle, not extending to the apical margin; the mandibles, scape, and flagellum beneath, fulvous. Thorax: a narrow line on the anterior and posterior margins of the prothorax, three oblique spots beneath the wings, the anterior and intermediate coxæ in front, the tegulæ, two longitudinal stripes on the mesothorax, the scutellum, post-scutellum, and a large spot on each side of the metathorax, yellowish-white; a fascia of the same colour on the apical margin of the petiolated segment of the abdomen, another on the apical and basal margin of the second segment, and a fascia on the apical margin of the third segment; the legs fusco-ferruginous, with the tarsi palest.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

57. *POLYBIA FLAVIFRONS*.

B.M.

Female. Length 9 mill.—Black: the face and vertex orange-yellow, with a line at the outer orbit of the eyes and a spot on the mandibles at their base of the same colour; the scape in front and the flagellum beneath, fulvous; a large cordate black spot on the vertex enclosing the stemmata. Thorax: a narrow line on the posterior margin of the prothorax, an oblique spot beneath the wings, the tegulæ and a narrow epaulet passing over them to the scutellum, a transverse spot before the latter emitting two narrow lines which terminate before the anterior margin of the mesothorax, the scutellum, post-scutellum, and a spot on each side of the metathorax, yellow; the anterior coxæ yellow in front; the legs fusco-ferruginous, palest in front; the wings subhyaline, with a narrow fuscous cloud along the anterior margin of the superior pair. Abdomen: the apical margins of

the segments with broad yellow fasciæ, which are slightly notched in the middle and waved on each side, that on the second segment running upwards laterally; beneath, the segments have a narrower border.

Hab. Venezuela (Guayaquil).

58. POLYBIA INDICA.

B.M.

Polybia Indica, *Sauss. Mon. Guêpes Soc.* 207. 52. t. 26. f. 3.

Hab. China.

59. POLYBIA ORIENTALIS.

B.M.

Polybia orientalis, *Sauss. Mon. Guêpes Soc.* 208. 53. t. 26. f. 2.

Hab. China.

60. POLYBIA TABIDA.

Vespa tabida, *Fabr. Spec. Ins.* i. 468. 62; *Mant. Ins.* i. 293. 76; *Ent. Syst.* ii. 281. 96.

Oliv. Encycl. Méth. vi. 673. 18.

Polistes tabida, *Fabr. Syst. Piez.* 278. 40.

Polybia tabida, *Sauss. Mon. Guêpes Soc.* 209. 54. t. 26. f. 4.

Hab. Africa.

Genus 11. TATUA.

Vespa, pt., *Fabr. Ent. Syst. Supp.* 264 (1798).

Epipona, pt., *Latr. Gen. des Crust. et Ins.* iv. 141 (1804).

Polistes, pt., *St. Farg. & Serv. Encycl. Méth.* x. 172 (1825).

Tatua, *Sauss. Mon. Guêpes Soc.* 214 (1853).

1. TATUA MORIO.

B.M.

Vespa morio, *Fabr. Ent. Syst. Supp.* 264. 98.

Epipona tatua, *Latr. Gen. des Crust. et Ins.* iv. 141. 1. t. 14. f. 5.

Cuv. Règ. Anim. v. 339.

St. Farg. Hym. i. 540. 1.

Polistes tatua, *St. Farg. & Serv. Encycl. Méth.* x. 172. 2.

Polistes morio, *Curtis, Trans. Linn. Soc. Lond.* xix. 258. 6.

Tatua morio, *Sauss. Mon. Guêpes Soc.* 214. 1. t. 31. f. 1.

Hab. Brazil.

2. TATUA GUERINI.

Tatua Guerini, *Sauss. Mon. Guêpes Soc.* 215. 2.

Hab. Mexico.

Genus 12. CHARTERGUS.

- Vespa*, pt., *Oliv. Encycl. Méth.* vi. (1791).
Epipona, pt., *Latr. Gen. des Crust. et Ins.* (1804).
Polistes, pt., *St. Farg. & Serv. Encycl. Méth.* x. 172 (1825).
Chartergus, *St. Farg. Hym.* i. 546 (1836).

1. CHARTERGUS APICALIS.

B.M.

- Vespa apicalis*, *Fabr. Syst. Piez.* 260. 38.
Polistes, *Gray, Griff. Anim. Kingd.* xv. 575. t. 3. f. 3.
Chartergus ater, *St. Farg. Hym.* i. 546. 1.
Chartergus apicalis, *Sauss. Mon. Guêpes Soc.* 217. 1.
Hab. Bolivia; Brazil; Cayenne; Mexico.

2. CHARTERGUS FULGIDIPENNIS.

- Chartergus fulgidipennis*, *Sauss. Mon. Guêpes Sol.* 218. 2. t. 31. f. 5.
Hab. Para.

3. CHARTERGUS COLOBOPTERUS.

- Vespa colobopterus*, *Weber, Obs. Entom.* 102. 5.
Seba, Locupl. Rer. Thes. iv. t. 98.
Chartergus colobopterus, *Sauss. Mon. Guêpes Soc.* 248. 3.
Hab. Columbia.

4. CHARTERGUS SMITHII.

- Chartergus Smithii*, *Sauss. Mon. Guêpes Soc.* 219. 4.
Hab. Brazil. (Coll. F. Smith.)

5. CHARTERGUS CHARTARIUS.

- Vespa chartaria*, *Oliv. Encycl. Méth.* vi. 687.
Vespa artifex Surinamensis, *Christ. Hym.* 226. t. 20.
Vespa nidulans, *Fabr. Ent. Syst.* ii. 271. 66; *Syst. Piez.* p. 266. 68.
Coqueb. Illustr. Icon. t. 6. f. 3.
Vespa chartifex, *Vallot, Concord. Syst.* p. 171.
Epipona nidulans, *Latr. Gen. des Crust. et Ins.* i. t. 14. f. 6.
Cuv. Règn. Anim. v. 339.
Epipona chartaria, *Latr. Hist. Crust. et Ins.* xiii. 102. t. 14. f. 6, 7.
Polistes nidulans, *St. Farg. & Serv. Encycl. Méth.* x. 172. 5.
Guér. Icon. Règ. Anim. t. 72. f. 7.
Epipona chartaria, *Curtis, Trans. Linn. Soc. Lond.* xix. 258. 4.
Réaum. Ins. vi. t. 20. f. 1-4, t. 21. f. 1, t. 22. f. 23, t. 24 ?
Hab. South America (Brazil, Cayenne, British Guiana); Mexico.

6. *CHARTERGUS GLOBIVENTRIS*.*Chartergus globiventris*, *Sauss. Mon. Guêpes Soc.* 221. 6. t. 31. f. 3.*Hab.* Brazil.7. *CHARTERGUS ATER*.*Chartergus ater*, *Sauss. Mon. Guêpes Soc.* 222. 7.*Hab.* Brazil.8. *CHARTERGUS ZONATUS*.*Chartergus zonatus*, *Spin. Mem. Accad. Torino*, n. s. xiii. 73. 54.*Sauss. Mon. Guêpes Soc.* 222. 8.*Hab.* Brazil (Para).9. *CHARTERGUS COMPRESSUS*.*Chartergus compressus*, *Sauss. Mon. Guêpes Soc.* 223. 9. t. 31. f. 6.*Hab.* Brazil (the Amazons).10. *CHARTERGUS EMORTUALIS*.

B.M.

Chartergus emortualis, *Sauss. Guérin's Rev. et Mag. Zool.* (1855) p. 374.*Hab.* Brazil (Santarem).11. *CHARTERGUS LUCTUOSUS*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Black: the clypeus with a curved line at its anterior margin in the middle, a large spot on the mandibles, an ovate spot on the lower part of the cheeks, a short stripe behind the eyes, a line at their inner orbits above the clypeus, a stripe on the scape in front and two spots between the antennæ, yellow; the flagellum obscurely ferruginous towards its apex beneath. Thorax: the anterior coxæ and tibiæ in front, yellow; the wings hyaline, their nervures fuscous. Abdomen: the first segment with a narrow yellow fascia on its posterior margin.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)Genus 13. *NECTARINA*.*Polistes*, pt., *Latr. Ann. Sci. Nat.* 1st ser. iv. (1825).*Brachygastra*, *Perty, Del. An. Art.* 146 (1817–20).*Nectarina*, *Shuck. Cab. Cycl. Hist. Ins.* 181 (1840).*Nectarinia*, *Sauss. Mon. Guêpes Soc.* 225 (1853).

1. NECTARINA RUFIVENTRIS.

B.M.

Nectarinia rufiventris, *Sauss. Mon. Guêpes Soc.* 226. 1.*Hab.* Brazil (Para).

2. NECTARINA SCUTELLATA.

B.M.

Brachygastra scutellata, *Spin. Mem. Accad. Torino*, new ser. xiii. no. 55. p. 74.*Nectarinia scutellata*, *Sauss. Mon. Guêpes Soc.* 227. 2.*Hab.* Brazil (Para).

3. NECTARINA BILINEOLATA.

Brachygastra bilineolata, *Spin. Ann. Soc. Ent. Fr.* x. p. 126 (1841).*Nectarinia bilineolata*, *Sauss. Mon. Guêpes Soc.* 228. 3. t. 34. f. 2.*Hab.* Cayenne.

4. NECTARINA SMITHII.

B.M.

Nectarinia Smithii, *Sauss. Mon. Guêpes Soc.* 229. 4. t. 31. f. 8.*Hab.* Brazil.

5. NECTARINA BINOTATA.

Nectarinia binotata, *Sauss. Mon. Guêpes Soc.* 230. 5.*Hab.* Cayenne.

6. NECTARINA ANALIS.

B.M.

Brachygastra analis, *Perty, Del. An. Art.* t. 28.*Nectarina analis*, *Shuck. Cab. Cycl. Hist. Ins.* p. 183 (1840).*Guér. Icon. Règ. Anim. Ins.* 148. t. 28. f. 6.*Nectarinia analis*, *Sauss. Mon. Guêpes Soc.* 230. 6.*Hab.* Brazil.

7. NECTARINA VELUTINA.

Brachygastra velutina, *Spin. Ann. Soc. Ent. Fr.* x. 126. 77. t. 3. no. 5 ♀ (1841).*Nectarinia velutina*, *Sauss. Mon. Guêpes Soc.* 231. 7.*Hab.* Brazil; Cayenne.

8. NECTARINA LECHEGUANA.

Polistes lecheguana, *Latr. Ann. Sci. Nat.* 1st ser. iv. 335.*Nectarinia lecheguana*, *Sauss. Mon. Guêpes Soc.* 232. 8. t. 34. f. 3.*Hab.* Brazil.

9. NECTARINA MELLIFICA.

Polistes mellifica, Say, *Bost. Journ. Nat. Hist.* i. p. 390.

Nectarinia mellifica, Sauss. *Mon. Guêpes Soc.* 233. 9.

Hab. Brazil.

10. NECTARINA AUGUSTI.

Nectarinia Augusti, Sauss. *Mon. Guêpes Soc.* 233. 10.

Hab. Mexico.

11. NECTARINA AURULENTA.

Brachygastera aurulenta, Erichs. *Fauna und Flora Brit. Guiana*,
iii. 590.

Hab. British Guiana.

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EXPLANATION OF PLATES.

PLATE I.

Fig.

1. *Paragia pictifrons*.
2. *Stenoglossa Odyneroides*.
3. *Gayella Mutilloides*.
4. *Raphiglossa Natalensis*.
5. *Smithia Natalensis*.

PLATE III.

Fig.

1. *Rhynchium Grayi*.
2. *Monopia angulosa*.
3. *Montezumia Indica*.
4. *Pterochilus insignis*.
5. *Leptochilus denticulatus*.

PLATE II.

Fig.

1. *Zethus lobulatus*.
2. *Discoelius insignis*.
3. *Zethus (Calligaster) gigas*.
4. *Eumenes multipictus*.
5. *Pachymenes chrysothorax*.

PLATE IV.

Fig.

1. *Alastor flavipes*.
2. *Belonogaster Guineensis*.
3. *Mischocyttarus Smithii*.
4. *Ischnogaster micans*.

PLATE V.

Fig.

1. *Polybia flavitarsis*.
2. *Nectarina Smithii*.
3. *Synæca testacea*.
4. *Vespa mandarinia*.

PLATE VI.

Fig.

1. Nest of *Eumenes tinctor*. Constructed of mud and suspended in stems of grass.
2. Nest of *Synagris mirabilis*. Constructed of sandy loam.
3. Nest of *Synagris calida*. Constructed of sandy loam.
4. Nest of *Pelopæus chalybeus*. Constructed of the excrement of cows or horses.
5. Nest of *Mischocyttarus labiatus*. Constructed of the scrapings of wood.
6. Nest of *Icaria guttatipennis*. Constructed of the scrapings of wood.
7. Nest of a species of *Eumenes*. Constructed of mud and attached to a reed.

List of the typical specimens of *Vespidae* in the Linnæan Collection, preserved in the Museum of the Linnæan Society referred to the genera in which they appear in this Catalogue.

Vespa coarctata.

- calida.
- cornuta.
- parietum.
- muraria.
- spinipes.
- bifasciata.
- Carolina.
- orientalis.
- gallica.
- biglumis.
- maculata.
- cincta.
- affinis.
- Crabro.
- vulgaris.
- rufa.

Eumenes coarctata.

Synagris calida.

- cornuta.

Odynerus parietum.

- murarius.

- spinipes.

- bifasciatus.

Polistes Carolina.

- orientalis.

- gallicus.

- biglumis.

Vespa maculata.

- cincta.

- affinis.

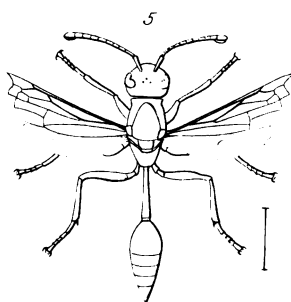
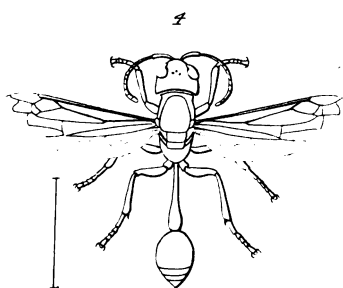
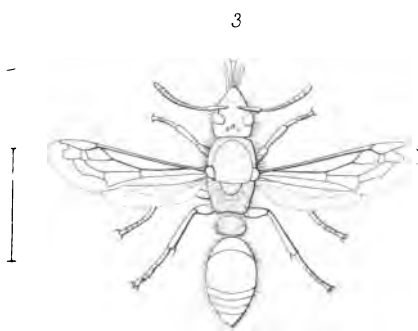
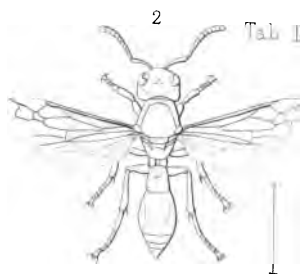
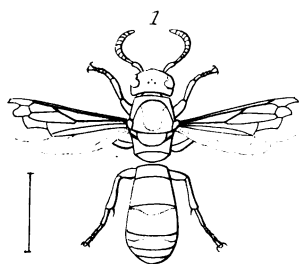
- Crabro.

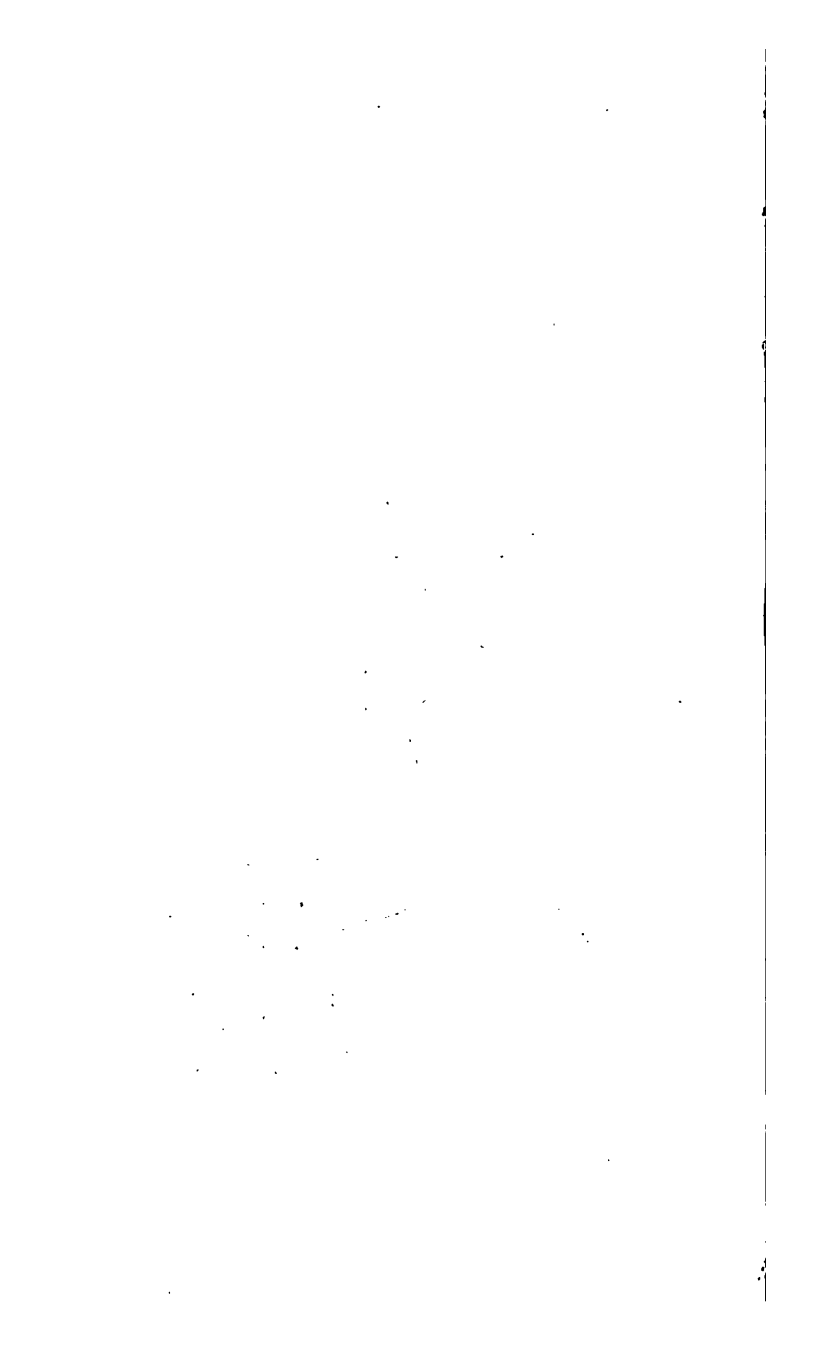
- vulgaris.

- rufa.

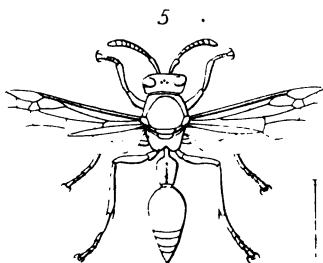
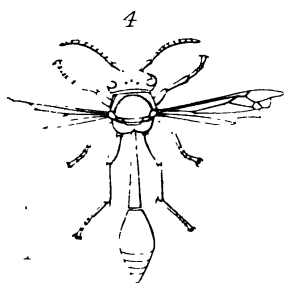
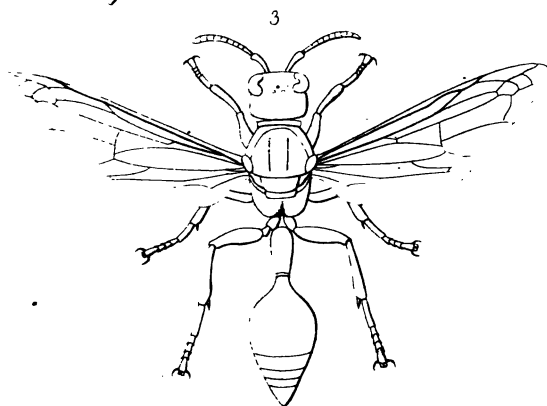
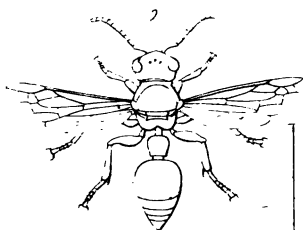
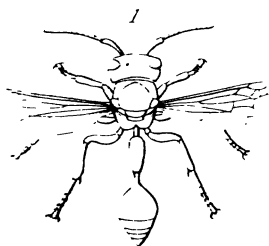
List of the typical specimens of *Vespidæ* in the Banksian Collection, preserved in the Museum of the Linnæan Society of London, described by Fabricius in the *Systema Piezatorum*; referred to the genera in which they appear in this Catalogue.

<i>Vespa cincta</i> ,	<i>Syst. Piez.</i>	p. 253.	1.	<i>Vespa cincta</i> .
— ephippium,	"	"	254.	3. <i>Abispa ephippium</i> .
— analis,	"	"	254.	6. <i>Odynerus analis</i> .
— æstuans,	"	"	258.	24. <i>Synagris æstuans</i> .
— hæmorrhoidalis,	"	"	259.	28. <i>Rhynchium hæmor-</i> <i>rhoidale</i> .
— albifrons,	"	"	259.	29. <i>Alastor albifrons</i> .
— tecta,	"	"	261.	40. <i>Odynerus tectus</i> .
— bicincta,	"	"	265.	64. — <i>bicinctus</i> .
— rufipes,	"	"	259.	32. <i>Rhynchium rufipes</i> .
<i>Polistes lanio</i> ,	"	"	269.	1. <i>Polistes Canadensis</i> .
— Schach,	"	"	272.	2. — <i>Schach</i> .
— humilis,	"	"	270.	5. — <i>humilis</i> .
— tepidus,	"	"	271.	7. — <i>tepidus</i> .
— Macaensis,	"	"	272.	12. — <i>Macaensis</i> .
— carnifex,	"	"	272.	13. — <i>carnifex</i> .
— marginalis,	"	"	272.	17. — <i>marginalis</i> .
— variabilis,	"	"	273.	20. — <i>variabilis</i> .
— lateralis,	"	"	273.	22. <i>Rhynchium laterale</i> .
— cinereus,				<i>Raphigaster juncus</i> .
— macilentus,				— <i>rufipennis</i> .
— cyanea,				<i>Syncæca cyanea</i> .
<i>Eumenes grisea</i> ,				<i>Raphigaster grisea</i> .
— campaniformis,				<i>Eumenes campani-</i> <i>formis</i> .
— arcuata,				— <i>arcuata</i> .
— petiolata,				— <i>petiolata</i> .



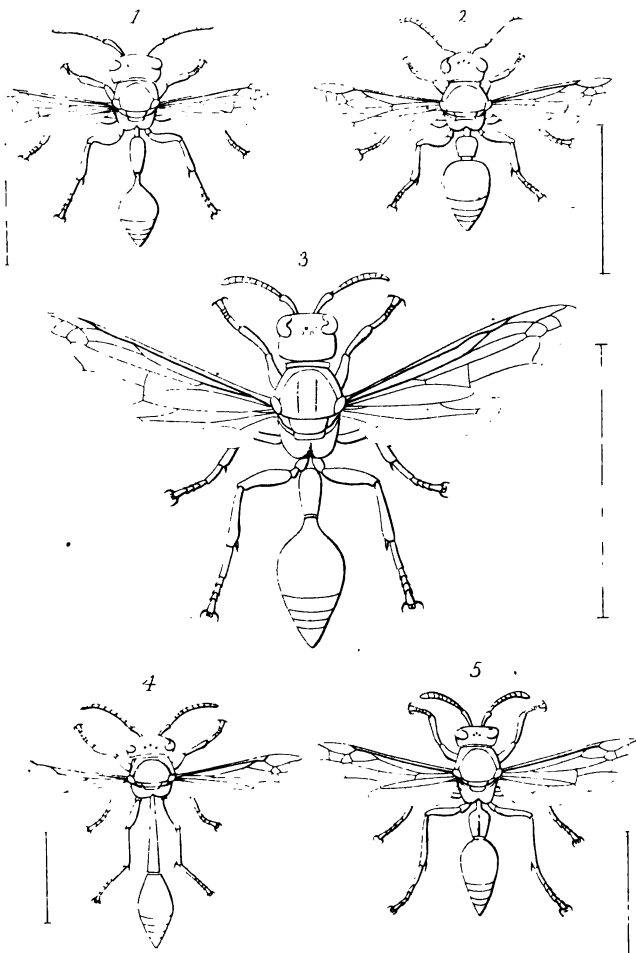


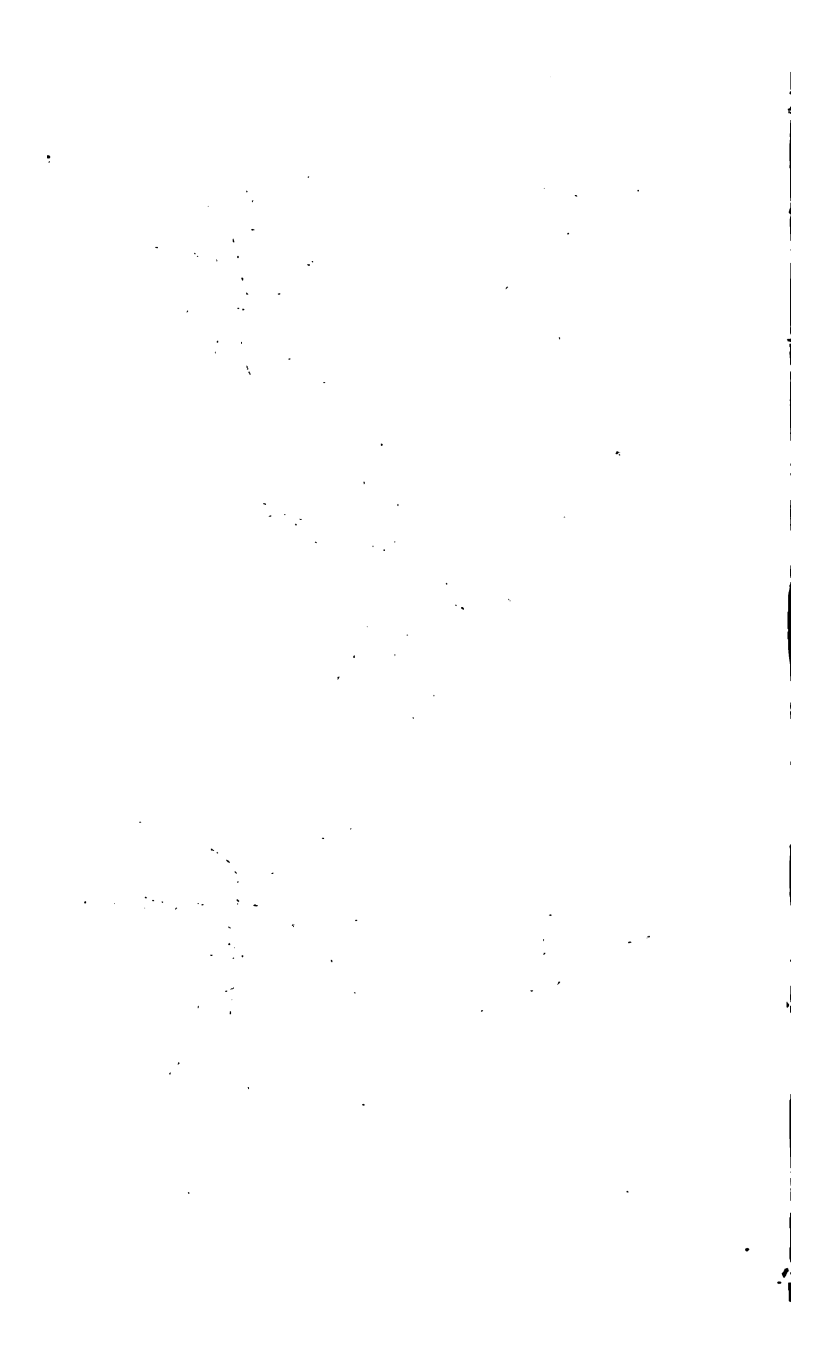
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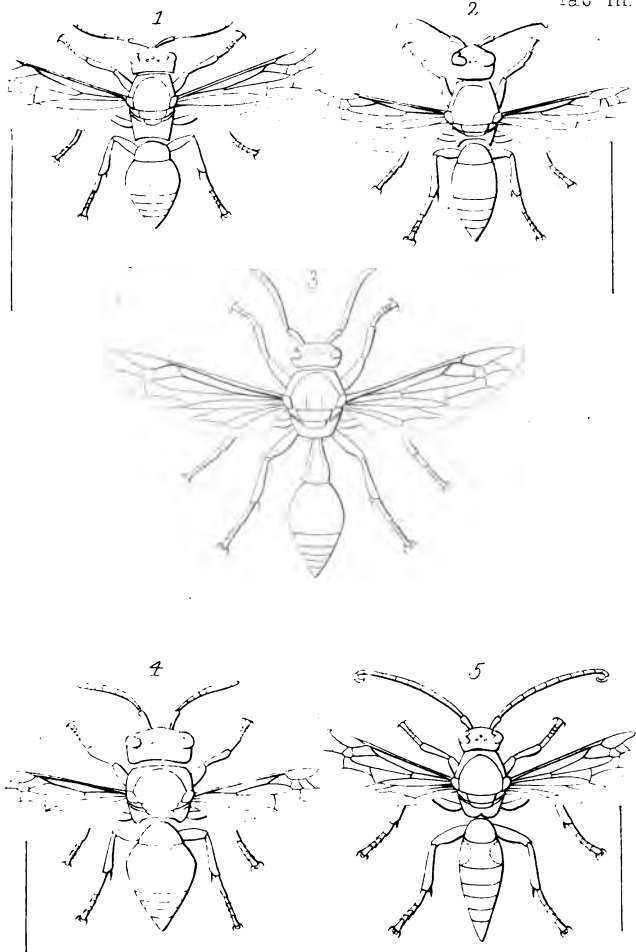


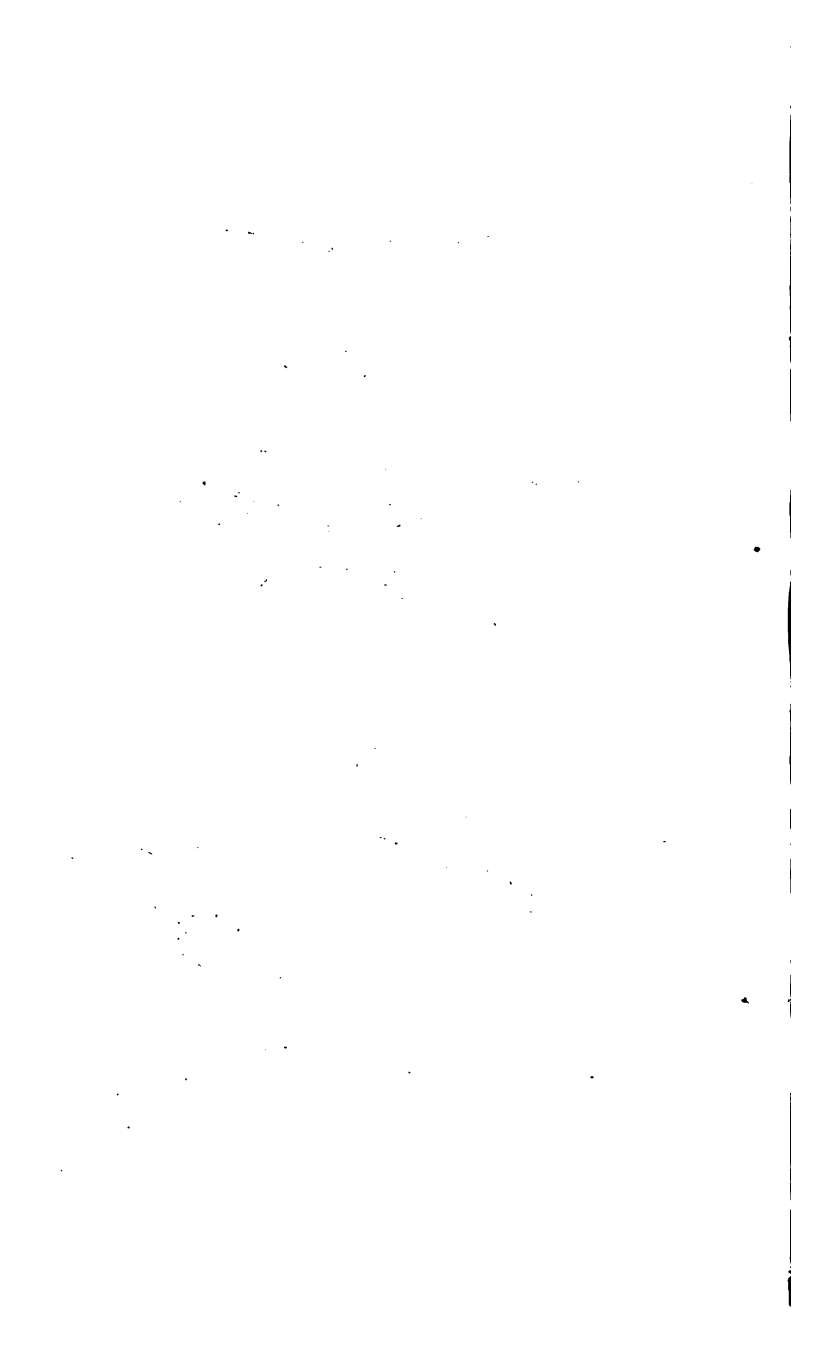


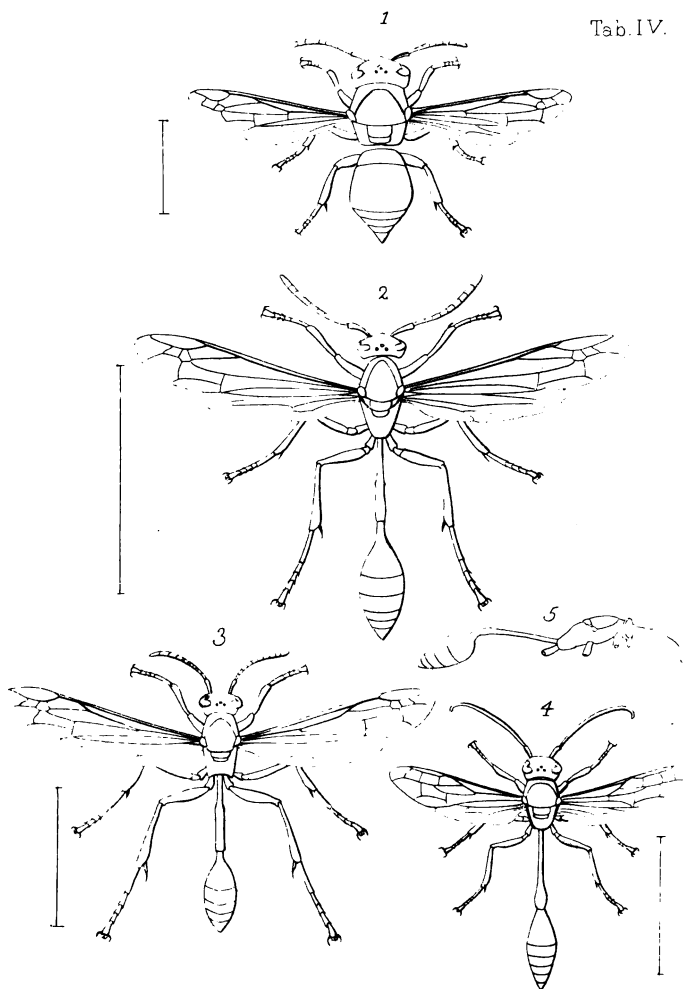
Tab II.





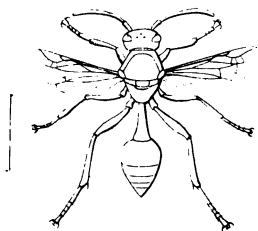




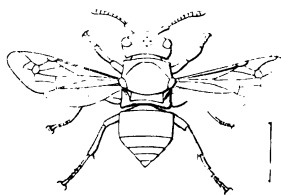




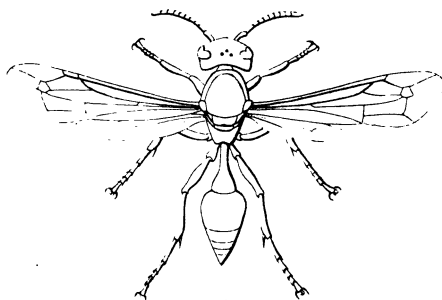
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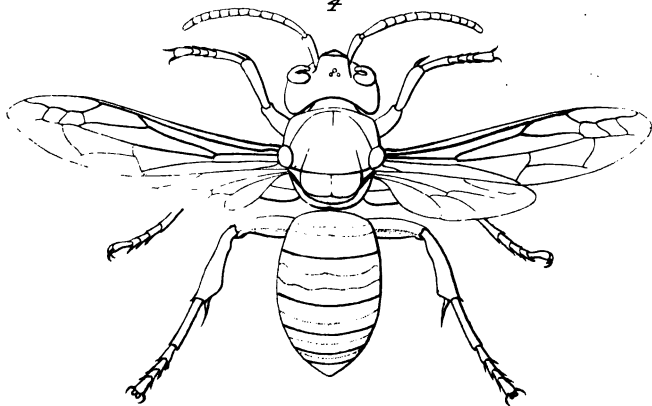
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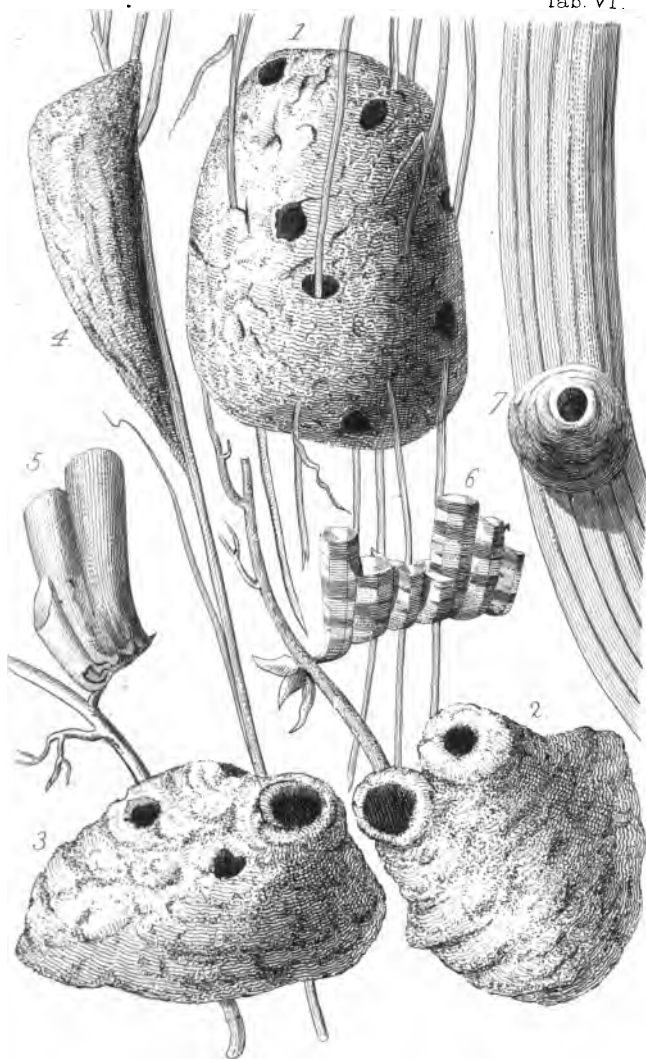


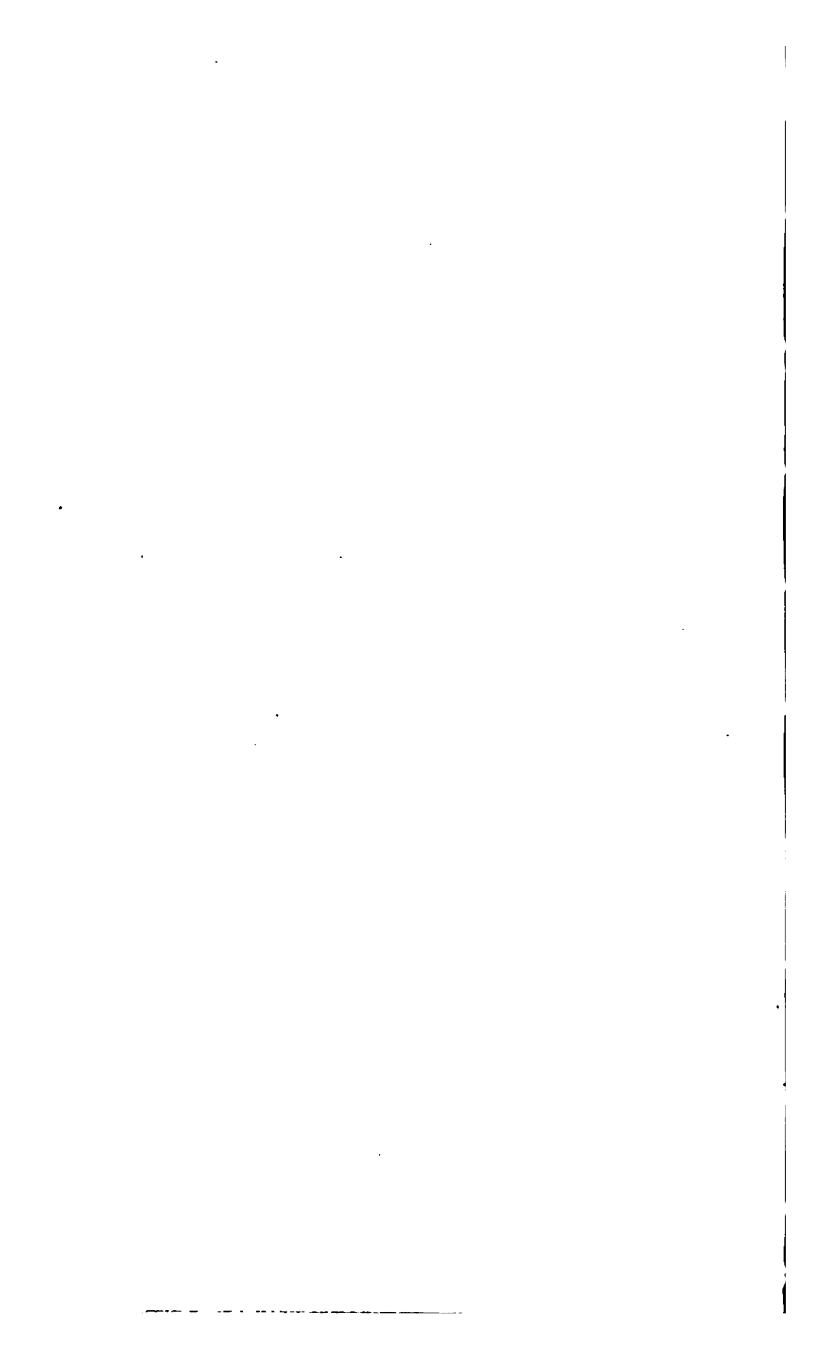
1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text outlines various methods for organizing and storing data, including digital databases and physical filing systems. It also mentions the need for regular audits and reviews to ensure the integrity of the information.

2. The second section focuses on the role of communication in the organization. It highlights the importance of clear and concise communication channels, both internally and externally. The text suggests implementing regular meetings and reports to keep all stakeholders informed and engaged. It also discusses the benefits of using technology to facilitate communication, such as email, video conferencing, and instant messaging. The section concludes by stressing the need for a culture of open communication and collaboration.

3. The third part of the document addresses the issue of resource management. It discusses the importance of identifying and allocating resources effectively to achieve organizational goals. The text provides guidelines for budgeting and financial planning, as well as strategies for managing human resources. It also touches upon the importance of maintaining adequate inventory and supplies. The section ends by emphasizing the need for flexibility and adaptability in resource management, as circumstances may change over time.

4. The final section discusses the importance of continuous improvement and innovation. It encourages the organization to regularly evaluate its processes and procedures to identify areas for improvement. The text suggests implementing a system of feedback and suggestions from employees and customers. It also discusses the importance of staying up-to-date with industry trends and technologies. The section concludes by stating that a commitment to continuous improvement is essential for long-term success and growth.





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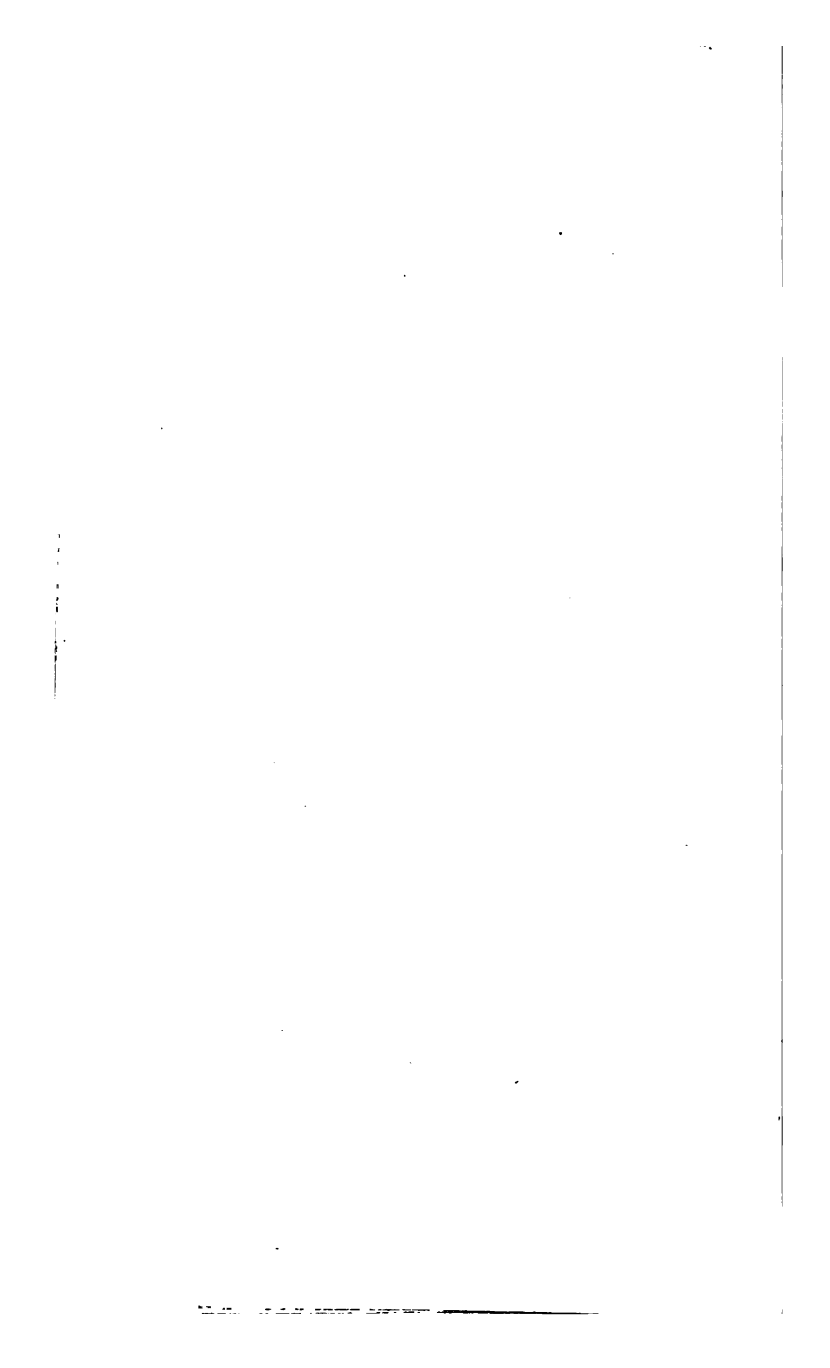
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THE END.



C A T A L O G U E
OF
HYMENOPTEROUS INSECTS
IN
THE COLLECTION
OF THE
BRITISH MUSEUM.

BY
FREDERICK SMITH, V.P., ENT. SOC.

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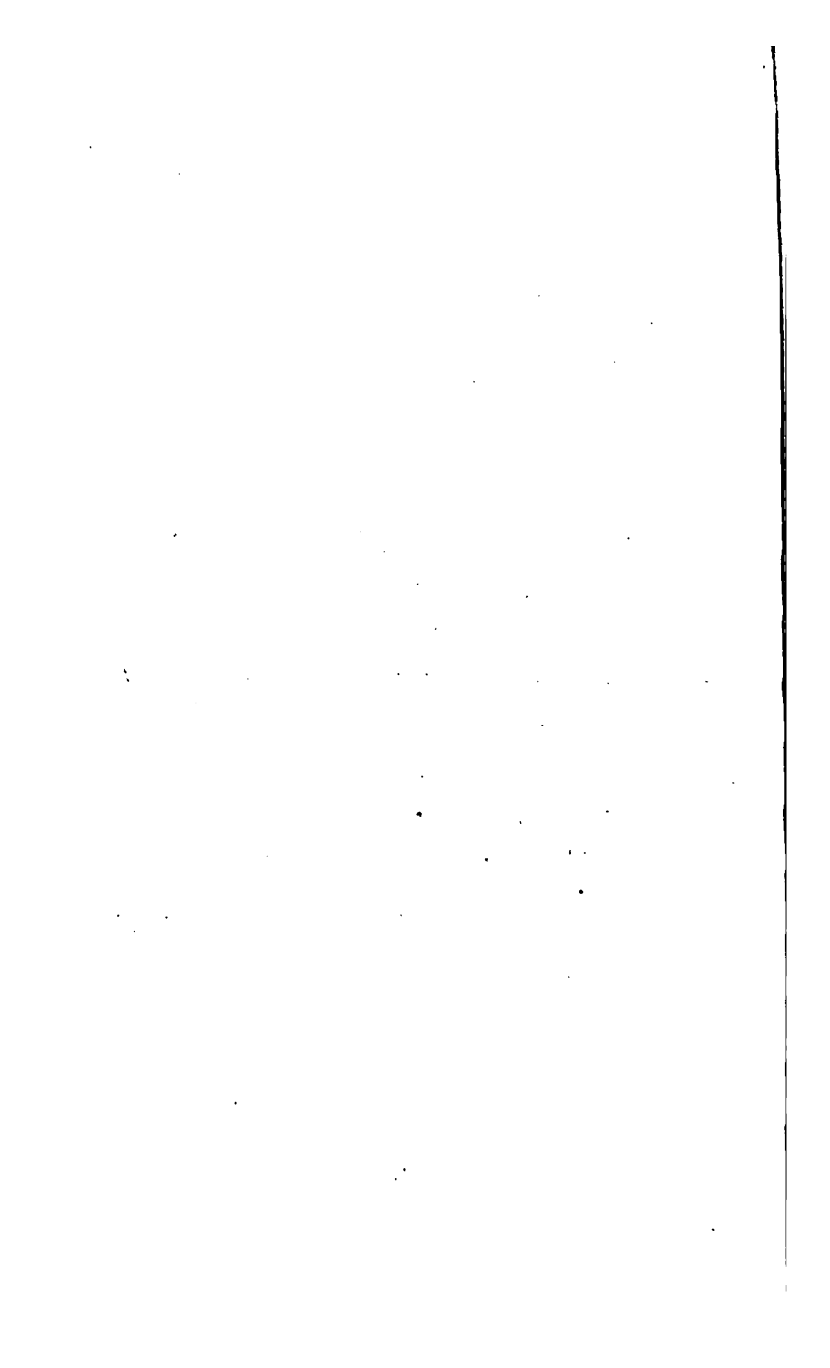
P R E F A C E.

THE object of the present Catalogue is to give a complete list of all the known genera and species of Ants (FORMICIDÆ), including those which have been previously recorded, together with descriptions of such as appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species contained in the Collection of the British Museum.

JOHN EDWARD GRAY.

1st March, 1858.



CATALOGUE

OF

HYMENOPTERA.

DIV. II. ACULEATA.

Tribe HETEROGYNA, *Latr.*

Family I. FORMICIDÆ, *Leach.*

Genus 1. FORMICA.

Formica, pt., *Linn. Faun. Succ.* 426 (1761); *Syst. Nat.* i. 962 (1766).

Lasius, pt., *Fabr. Syst. Piez.* 415 (1804).

Cataglyphis, *Foerst. Hym. Stud. Form.* 485 (1850).

Tapinoma, pt., *Schenck, Besch. Nass. Ameis.* 129 (1852).

Monocombus, *Mayr.* 110 (1855).

The maxillary palpi 6-jointed; the labial palpi 4-jointed. Ocelli 3, placed in a triangle on the vertex*. Males and females winged, constantly so in the former sex, temporarily so in the latter. The superior wings with one marginal and two submarginal cells; one division having also a complete discoidal cell, another in which it is obsolete; the petiole of the abdomen furnished with a single vertical scale. None of the individuals furnished with a sting. The pupæ enclosed in silken cocoons.

* In a few species these are obliterated, or scarcely discernible, as in the small workers of *F. flava* and *F. nigra*, &c.

Species of Europe. (Sp. 1-25.)

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle vertical and compressed. Ocelli present in the males, females, and usually so in the workers.

A. *Males smaller than the females, but not remarkably so.*

Note.—In describing the workers of this genus we have used the terms Worker major and Worker minor; amongst the British species such positive distinctions are not so readily discernible as in many exotic ones; amongst these, the large workers are distinguished by an enormously developed head, wider than either the thorax or abdomen; the small workers in such species have the head of the ordinary size and form, not being wider than the abdomen; these have also usually more slender and elongate legs. In the majority of the British species two forms or sizes of workers are to be met with, but in the societies of *F. fuliginosa* little or no difference in size is to be detected. The *ocelli*, as a general rule, are to be found in all the sexes, but in *F. nigra*, *flava* and *umbrata* they are only to be seen under a high magnifying power.

1. FORMICA RUFA. Pl. III. figs. 1, 7, 8, 9. B.M.
Formica rufa, Linn. *Faun. Suec.* no. 1721; *Syst. Nat.* i. 962. 3.
Scop. Ins. Carn. 313. 836.
Fabr. Syst. Ent. 391. 4; *Ent. Syst.* ii. 351. 8; *Syst. Piez.* 398. 11.
Schrank, Ins. Austr. no. 834.
Rossi, Faun. Etrus. ii. 113. 836.
Don. Brit. Ins. xiv. 76. t. 496 ♀.
Oliv. Encycl. Méth. vi. 493. 14.
Latr. Hist. Nat. Fourm. 143. pl. 5. f. 28. A. B. ♂ ♀ ♂.
Dumér. Consid. gén. 211. t. 32. f. 2 ♀.
Jurine, Hym. 272.
St. Farg. Hym. i. 201. 3.
Curtis, Brit. Ent. xvi. t. 752 ♂ ♀ ♂.
Zett. Ins. Lapp. 449. 5.
Brullé, Expéd. Sc. de Morée, iii. 327. 727.
Nyl. Form. Fr. et d'Algér. 60. 14; *Adno. Mon. Form. Bor.* 902. 5.
Foerst. Hym. Stud. Form. 13. 3.
Schenck, Besch. Nass. Ameis. 25.
Smith, Brit. Form. Trans. Ent. Soc. Lond. iii. n. s. 100. 1.
Mayr. Form. Austr. 56. 9; *Ungar. Ameis.* 9. 9.

- Formica dorsata*, *Panz. Faun. Germ.* 54. 1 ♀.
Formica obsoleta, *Zett. Ins. Lapp.* 449. 5 ♀ ♂.
Formica lugubris, *Zett. idem*, 6 ♂.
Formica polycetena, *Foerst. Hym. Stud. Form.* 15. 4.
Schenck, Besch. Nass. Ameis. 28.
Formica truncicola, *Foerst. Hym. Stud. Form.* 21.
Formica piniphila, *Schenck, Besch. Nass. Ameis.* 28.
Hab. Europe.

This species is popularly known as the Wood-ant, from the circumstance of its forming the heaped-up nests of leaves, sticks and similar materials, usually in woods, but colonies are frequently met with in other situations; indeed it sometimes takes possession of the decaying trunk of a tree, and has been observed in a wall built of turf; but woods are its common habitat. The nests of this species are the habitat of several Coleoptera, which probably resort to them as suitable situations in which to undergo their metamorphoses; of such, *Cetonia aurata* and *Clythra quadripunctata* are examples: besides these, there are also found in the nests a number of species belonging to the family Staphylinidæ, and as these are carried into the nests by the ants themselves, there can be little doubt, as they are not only suffered to live, but are carefully tended to and protected by the ants, that they are in some way conducive to the welfare of the communities, probably emitting, like the Aphidæ, secretions which are supplied by the working ants to their young brood. In the nest are also occasionally found colonies of the allied genus *Myrmica*; *M. nitidula* and *M. muscorum* are sometimes met with, and we have twice found a colony of *M. levinodis* living in perfect harmony with the rightful owners in the very heart of the nest.

2. FORMICA CONGERENS.

B.M.

- Formica congerens*, *Nyl. Adno. Mon. Form.* 906. 7; *Addit. Alter. Mon. Form.* 30; *Form. Fr. et d'Algér.* 61. 15.
Foerst. Hym. Stud. Form. 17. 5.
Schenck, Besch. Nass. Ameis. 30.
Mayr. Form. Austr. 60. 10; *Ungar. Ameis.* 10. 10.

Hab. Britain; France; Germany; Hungary; Switzerland; Italy; Finland.

This species, which closely resembles the wood-ant, *F. rufa*, has been found in Scotland; it is readily distinguished by its being much more pubescent than *F. rufa*. It constructs similar nests to the wood-ant, and in its nests are found not only a species of *Myrmica*, but several interesting species of Staphy-

linidæ; and Dr. Nylander discovered in the nests of this species the *Tinea ochracella*, in Finland.

3. FORMICA TRUNCICOLA.

B.M.

Formica truncicola, Nyl. *Adno. Mon. Form. Bor.* 907; *Form. Fr. et d'Algér.* 62.

Schenck, Besch. Nass. Ameis. 33.

Mayr. Form. Austr. 62. 11; *Ungar. Ameis.* 10. 11.

Hab. Germany; Austria; Switzerland; Hungary; Italy; Lapland; Finland; Denmark.

4. FORMICA TRUNCORUM.

Formica truncorum, *Fabr. Syst. Piez.* 403. 31 ♀.

Formica truncicola, *Nylander* ♀?

Hab. Moravia.

5. FORMICA SANGUINEA. Pl. III. fig. 10.

B.M.

Formica sanguinea, *Latr. Hist. Nat. Fourm.* 150. pl. 5. f. 29 ♂.

Jurine, Hym. 272.

St. Farg. Hym. i. 203. 4 ♂ ♀ ♂.

Foerst. Hym. Stud. Form. 20. 6.

Schenck, Besch. Nass. Ameis. 36.

Smith, Brit. Form. 101. 2.

Mayr. Form. Austr. 64. 12; *Ungar. Ameis.* 10. 12.

Nyl. Form. Fr. et d'Algér. 62. 16.

Formica dominula, Nyl. *Adno. Mon. Form. Bor.* 905. 6.

Hab. Britain; France; Germany; Austria; Hungary; Italy; Finland; Arctic America.

This is the only species of the genus *Formica* which plunders the nests of other species of their young brood in the pupa state, which they bring up as slaves to their own community. The species is not uncommon in Hampshire, where it attacks the nests of *F. fusca* and *F. cunicularia*; in its nests have also been observed numerous individuals of the yellow ant, *F. flava*; it does not raise nests similar to the wood-ant, but belongs to the division of mining ants.

6. FORMICA EXSECTA. Pl. III. figs. 18-21.

B.M.

Formica exsecta, Nyl. *Adno. Mon. Form. Bor.* 909. 9; *Form. Fr. et d'Algér.* 63. 17.

Foerst. Hym. Stud. Form. 23. 8.

Schenck, Besch. Nass. Ameis. 38.

Mayr. Form. Austr. 68. 14; *Ungar. Ameis.* 10. 14.

Hab. France; Germany; Austria; Finland; Lapland; Hungary.

7. FORMICA PRESSILABRIS.

B.M.

Formica pressilabris, *Nyl. Adno. Mon. Form. Bor.* 911. 10; *Form. Fr. et d'Algér.* 63.

Mayr. Form. Austr. 67. 13; *Ungar. Ameis.* 10. 13.

Hab. Scandinavia; Austria; Hungary; Finland.

8. FORMICA CUNICULARIA. Pl. III. figs. 12, 13, 23. B.M.

Formica cunicularia, *Latr. Hist. Nat. Fourm.* 151 ♂.

Huber, Rech. Fourm. t. 2. f. 11, 12, 13 ♂ ♀ ♂.

Losana, Fourm. Piem. 316.

St. Farg. Hym. i. 203. 5.

Nyl. Adno. Mon. Form. 913. 11; *Form. Fr. et d'Algér.* 64. 18.

Foerst. Hym. Stud. Form. 25. 9.

Schenck, Besch. Nass. Ameis. 40.

Smith, Brit. Form. 103. 3.

Mayr. Form. Austr. 70. 15; *Ungar. Ameis.* 11. 15.

Formica stenoptera, *Foerst. Hym. Stud. Form.* 26. 10.

Hab. Britain; France; Germany; Austria; Hungary; Siberia; Finland.

9. FORMICA CINEREA.

Formica cinerea, *Mayr. Form. Austr.* 72. 16 ♂ ♀ ♂; *Ungar. Ameis.* 11. 17.

Nyl. Form. Fr. et d'Algér. 64. 19.

Hab. France; Germany; Hungary; Italy.

10. FORMICA FUSCA. Pl. III. fig. 14.

B.M.

Formica fusca, *Linn. Faun. Suec.* 226. 1722; *Syst. Nat.* i. 963. 4.

Fabr. Ent. Syst. ii. 352. 11; *Syst. Piez.* 399. 13.

Schrank, Ins. Austr. 413.

Latr. Hist. Nat. Fourm. 159. pl. 6. f. 32. A. ♂. E. ♂.

Oliv. Encycl. Méth. vi. 493. 13.

Huber, Rech. Fourm. t. 2. f. 8, 9, 10.

Zett. Ins. Lapp. 448.

Brullé, Hist. Nat. Il. Canar. iii. 84. 3.

Losana, Form. Piem. 317.

St. Farg. Hym. i. 205. 6.

Nyl. Adno. Mon. Form. Bor. 919. 15; *Addit. Alter.* 30;

Form. Fr. et d'Algér. 65. 20.

Schenck, Besch. Nass. Ameis. 43.

Smith, Brit. Form. 104. 4.

Mayr. Form. Austr. 74. 17; *Ungar. Ameis.* 11. 16.

Formica glebaria, *Nyl. Adno. Mon. Form. Bor.* 917. 14.

Foerst. Hym. Stud. Form. 31. 13.

Hab. Britain; France; Germany; Austria; Hungary; Finland; Madeira.

11. *FORMICA GAGATES.*

B.M.

Formica gagates, *Latr. Hist. Nat. Fourm.* 138. pl. 5. f. 26. A. ♂, 26 B. ♀.

Losana, Form. Piem. 315.

St. Farg. Hym. i. 200.

Mayr. Form. Austr. 75. 18; *Ungar. Ameis.* 11. 13.

Nyl. Form. Fr. et d'Algér. 65. 21.

Formica capsincola, *Schill. Bemerk. Schles.* 54.

Formica picea, *Nyl. Adno. Mon. Form. Bor.* 917. 13; *Addit. Adno. Mon. Form.* 1059.

Foerst. Hym. Stud. 30. 12.

Hab. France; Germany; Austria; Switzerland; Hungary; Finland.

12. *FORMICA NASUTA.*

Formica nasuta, *Nyl. Form. Fr. et d'Algér.* 66. 22.

Hab. France.

B. Males very much smaller than the females.

13. *FORMICA FULIGINOSA.*

B.M.

Formica fuliginosa, *Latr. Hist. Nat. Fourm.* 140. pl. 5. f. 27.

A. B. ♂, C. D. ♂, F. ♀.

Losana, Form. Piem. 315.

St. Farg. Hym. i. 200. 2.

Schill. Bemerk. Schles. 55.

Nyl. Adno. Mon. Form. Bor. 915. 12; *Form. Fr. et d'Algér.* 66. 23.

Foerst. Hym. Stud. Form. 28. 17.

Schenck, Besch. Nass. Ameis. 45.

Smith, Brit. Form. 105. 5.

Mayr. Form. Austr. 79. 19; *Ungar. Ameis.* p. 12. 19.

Hab. Britain and throughout Europe.

14. *FORMICA NIGRA.*

B.M.

Formica nigra, *Linn. Faun. Suec.* no. 1723; *Syst. Nat.* i. 963. 4 ♀.

Scop. Ent. Carn. 834?

Fabr. Syst. Ent. 392. 6; *Ent. Syst.* ii. 352. 10.

Formica nigra, *Losana, Form. Piem.* 317.

Latr. Hist. Nat. Fourm. 156.

Oliv. Encycl. Méth. vi. 492. 11.

St. Farg. Hym. i. 206. 7.

Nyl. Adno. Mon. Form. Bor. 920. 16; *Form. Fr. et d'Algér.* 67. 24.

Schenck, Besch. Nass. Ameis. 49.

Smith, Brit. Form. 109. 8.

Mayr. Form. Austr. 83. 20; *Ungar. Ameis.* 13. 20.

Lasius niger, *Fabr. Syst. Piez.* 415. 1.

Formica fusca, *Foerst. Hym. Stud. Form.* 33.

Hab. Throughout Europe. Madeira.

15. FORMICA ALIENA.

Formica aliena, *Foerst. Hym. Stud. Form.* 36. 16.

Schenck, Besch. Nass. Ameis. 51.

Mayr. Form. Austr. 88. 22.

Formica aliena, p. 13. 22.

Nyl. Form. Fr. et d'Algér. 68. 25.

Formica nigra (var. ?). *Smith, Brit. Form.* 109. 8.

Hab. France; Germany; Austria; Switzerland; Hungary; Italy.

16. FORMICA EMARGINATA.

Formica emarginata, *Latr. Hist. Nat. Fourm.* 163. pl. 6. f. 33.

A. ♀, 33 B. ♂, 33 D. ♀.

Oliv. Encycl. Méth. vi. 494. 16.

Losana, Form. Piem. 319.

St. Farg. Hym. i. 207. 8.

Nyl. Form. Fr. et d'Algér. 68. 26.

Formica brunnea, *Mayr. Form. Austr.* 86. 21 (exclus. synonym.);

Ungar. Ameis. 13. 21 ?

Hab. France; Germany; Austria; Hungary; Italy.

17. FORMICA BRUNNEA.

Formica brunnea, *Latr. Fourm.* 169. pl. 6. f. 35 ♀.

Losana, Form. Piem. 319.

Nyl. Form. Fr. et d'Algér. 68. 27.

Mayr. Ungar. Ameis. p. 13. 21.

Formica timida, *Foerst. Hym. Stud. Form.* 35. 15.

Schenck, Besch. Nass. Ameis. 53.

Mayr. Form. Austr. 89. 23 ?

Hab. Britain; France; Germany; Italy, &c.; Georgia.

18. FORMICA RUBIGINOSA.

Formica rubiginosa, Latr. *Hist. Nat. Fourm.* 170 ♀.

Hab. France (Lyons).

19. FORMICA FLAVA.

B.M.

Formica flava, De Geer, *Ins.* ii. 1089. 5. t. 42. f. 24-28.

Fabr. Ent. Syst. ii. 357. 34.

Latr. Hist. Nat. Fourm. 166. pl. 6. f. 36. A. ♂, B. ♂, E. ♀.

Oliv. Encycl. Méth. vi. 496. 29.

Losana, Form. Piem. 331.

St. Farg. Hym. i. 208. 9.

Nyl. Adno. Mon. Form. Bor. 922. 17; *Form. Fr. et d'Algér.* 69. 28.

Foerst. Hym. Stud. Form. 38. 17.

Schenck, Besch. Nass. Ameis. 56.

Smith, Brit. Form. 108. 7.

Mayr. Form. Austr. 91. 24; *Ungar. Ameis.* 14. 24.

Hab. Britain; France; Germany; Austria; Hungary; Lapland; Finland.

20. FORMICA AFFINIS.

Formica affinis, Schenck, *Beschr. Nass. Ameis.* 62.

Mayr. Form. Austr. 96. 27.

Hab. Austria; Germany.

21. FORMICA UMBRATA. Pl. III. fig. 11.

B.M.

Formica umbrata, *Nyl. Addit. Mon. Form. Bor. Eur.* 1048;

Form. Fr. et d'Algér. 70. 29.

Smith, Append. Cat. Brit. Hym. 116; *Brit. Form.* 106. 6.

Foerst. Hym. Stud. Form. 39. 18.

Schenck, Besch. Nass. Ameis. 59.

Mayr. Form. Austr. 93. 25; *Ungar. Ameis.* 14. 25.

Formica mixta, *Foerst. Hym. Stud. Form.* 41 & 72.

Hab. Britain; France; Germany; Austria; Hungary; Finland; Sweden.

22. FORMICA BICORNIS.

Formica bicornis, *Foerst. Hym. Stud. Form.* 41. 20.

Mayr. Form. Austr. 97.

Nyl. Form. Fr. et d'Algér. 70.

Formica affinis, *Schenck, Nass. Ameis.* 70?

Formica incisa, *Schenck, Nass. Ameis.* 63?

Hab. Germany.

23. FORMICA MIXTA.

Formica mixta, *Nyl. Addit. Adno. Mon. Form. Bor.* 1050; *Form. Fr. et d'Algér.* 70. 30.

Schenck, Besch. Nass. Ameis. 64.

Mayr. Form. Austr. 95. 26.

Hab. France; Germany; Austria; Switzerland.

24. FORMICA VIATICA. Pl. III. fig. 4.

B.M.

Formica viatica, *Fabr. Mant. Ins.* i. 308 ♀; *Ent. Syst.* ii. 356. 27; *Syst. Piez.* 404. 33.

Oliv. Encycl. Méth. vi. 495. 24.

Latr. Hist. Nat. Fourm. 173.

Nyl. Form. Fr. et d'Algér. 59. 12.

Ménétr. Mém. Acad. Imp. des Sc. St. Pétersb. vi. 306. 82 (1849).

Formica bicolor, *Fabr. Ent. Syst.* ii. 351. 5 ♂.

Latr. Hist. Nat. Fourm. 123.

Formica megalocola, *Foerst. Verh. d. naturh. Ver. d. Rheinl.* vii. 485.

Cataglyphis Fairmairei, *Foerst. Ver. d. naturh. Ver. d. Rheinl.* vii. 485 ♂.

Monocombus viaticus, *Mayr. Form. Austr.* 110. 1.

Hab. Europe (Germany; Spain). Africa (Nubia; Algeria).

25. FORMICA CURSOR.

Formica cursor, *Fonscol. Ann. Soc. Ent. Fr.* iv. 41 (1846) ♂ ♀ ♀.

Nyl. Form. Fr. et d'Algér. 60. 13.

Mayr. Ungar. Ameis. 7. 8.

Hab. France; Hungary.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells, the discoidal cells obsolete; the scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose; the ocelli obsolete in the workers.

Species of Europe. (Sp. 26–41.)

26. FORMICA ÆTHIOPS.

B.M.

Formica æthiops, *Latr. Hist. Nat. Fourm.* 101 ♂ ♀ ♀. pl. 2. f. 4. A. B. ♀.

Formica æthiops, *Losana*, *Form. Piem. Mem. Accad. Torino*, xxxvii. 312.

St. Farg. Hym. i. 212. 13.

Mayr. Form. Austr. 41. 4; *Ungar. Ameis.* 5. 3.

Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat. v. 54. 2 (1856).

Formica nigrata, *Nyl. Addit. Adno. Mon. Form.* 35?

Hab. France; Germany; Helsingfors.

27. *FORMICA HERCULANEA*. Pl. III. figs. 2, 15, 16. B.M.

Formica herculanea, *Linn. Faun. Suec.* 1720; *Syst. Nat.* i. 962. 1.

Fabr. Syst. Ent. 391. 1; *Ent. Syst.* ii. 349. 1; *Syst. Piez.* 395. 1.

Oliv. Encycl. Méth. vi. 491. 1.

St. Farg. Hym. i. 209. 11.

Zett. Ins. Lapp. 448.

Brullé, Expéd. Sc. de Morée, iii. 326. 720.

Nyl. Adno. Mon. Form. Bor. 894. 1; *Addit. Adno. Mon. Form.* 1044.

Foerst. Hym. Stud. Form. 9. 1.

Mayr. Form. Austr. 36. 2.

Ménétr. Mém. Acad. Imp. des Sc. St. Pétersb. vi. 307. 83.

Formica rufa, *Linn. Faun. Suec.* 1721 ♀.

Zett. Ins. Lapp. 448. 2 ♀, var.

Formica intermedia, *Zett. Ins. Lapp.* 448. 2 ♀, var.

Formica atra, *Zett. Ins. Lapp.* 450. 7.

Hab. Britain; France; Germany; Austria; Switzerland; Northern Europe; Siberia; Arctic America.

28. *FORMICA LIGNIPERDA*. Pl. III. fig. 17. B.M.

Formica ligniperda, *Latr. Hist. Nat. Fourm.* 88. t. 1. H. I. ♂, K. L. ♀, A. B. ♀.

St. Farg. Hym. i. 209. 11. t. 2. f. 1 ♀, 2 ♀.

Lucas, Expl. Sc. d'Algér. iii. 302.

Nyl. Adno. Mon. Form. 898. 2; *Addit. Mon. Form.* 1045;

Form. Fr. et d'Algér. 55. 5.

Foerst. Hym. Stud. Form. 11. 2.

Schenck, Besch. Nass. Ameis. 20.

Mayr. Form. Austr. 32. 1; *Ungar. Ameis.* p. 4. 1.

Hab. France; Germany; Austria; Northern Europe; Hungary.

29. *FORMICA NIGRATA*.

Formica nigrata, *Nyl. Addit. Alter. Adno. Mon. Form. Bor.* 35. 1.

Hab. Messina; South Russia.

30. FORMICA PUBESCENS.

B.M.

Formica pubescens, *Fabr. Syst. Ent.* 392. 5; *Ent. Syst.* ii. 352.9 ♂; *Syst. Piez.* 399. 12.*Oliv. Encycl. Méth.* vi. 492. 10.*Latr. Hist. Nat. Fourm.* 96. pl. 1. f. 2 A.B. ♂, D.E. ♂, H.I. ♀.*Losana, Form. Piem. Mem. Accad. Torino*, xxxvii. 312.*Brullé, Hist. Nat. Il. Canar.* iii. 84. 1.*St. Farg. Hym.* i. 211. 12.*Nyl. Adno. Mon. Form. Bor.* 899. 3; *Form. Fr. et d'Algér.* 56. 7.*Lucas, Explo. Sc. Algér.* iii. 302.*Mayr. Form. Austr.* 38. 3; *Ungar. Ameis.* 5. 2.*Formica fuscoptera*, *Oliv. Encycl. Méth.* vi. 491. 2.*Formica vaga*, *Scop. Ent. Carn.* 313.*Schrank, Enum. Ins. Austr.* 414.*Hab.* France; Germany; Austria; Hungary; Italy; Arctic America; Algeria.

31. FORMICA MARGINATA.

B.M.

Formica marginata, *Latr. Hist. Nat. Fourm.* 103 ♀ ♂.*Losana, Form. Piem. Mem. Accad. Torino*, xxxvii. 313.*Nyl. Form. Fr. et d'Algér.* 54. 1.*Mayr. Form. Austr.* 42. 5 ♂; *Ungar. Ameis.* 6. 4.*Hab.* France; Germany; Austria; Hungary; Italy.

32. FORMICA OPACA.

B.M.

Formica opaca, *Nyl. Form. Fr. et d'Alg. Ann. Sc. Nat.* v. 55. 3. (1856) ♀.*Savign. Egypt.* x. 20. f. 7 ♂.*Hab.* France; Algeria.

33. FORMICA FALLAX.

Formica fallax, *Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat.* v. 57. 8 ♀ (1856).*Hab.* France (Montpellier).

34. FORMICA AUSTRIACA.

Formica austriaca, *Mayr. Form. Austr.* 46. 7.*Nyl. Form. Fr. et d'Algér.* 57 (note).*Hab.* Austria.

35. FORMICA FUSCIPES.

Formica fuscipes, Mayr. *Form. Austr.* 45. 6 ♂.

Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat. v. 57. 9 (1856).

Hab. Austria; Italy; France.

36. FORMICA TRUNCATA.

B.M.

Formica truncata, Spin. *Ins. Ligur.* i. 244.

Duf. et Perr. Ann. Soc. Ent. Fr. ix. 49. t. 3. f. 52-55 (1840).

Mayr. Form. Austr. 47.

Nyl. Form. Fr. et d'Algér. 58. 10.

Hab. France; Italy.

37. FORMICA LATERALIS.

Formica lateralis, Oliv. *Encycl. Méth.* vi. 497. 34.

Latr. Hist. Nat. Fourm. 172.

St. Farg. Hym. i. 217. 22.

Mayr. Form. Austr. 50.

Nyl. Form. Fr. et d'Algér. 58. 11.

Formica bicolor, Latr. *Ess. Fourm. Fr.* 43.

Formica melanogastes, Latr. *Hist. Nat. Fourm.* 171. pl. 7. 39.

Formica axillaris, Spin. *Ins. Ligur.* i. 243.

Formica atricolor, Nyl. *Addit. Alter. Mon. Form.* 36.

Formica dalmatica, Nyl. *Addit. Alter. Mon. Form.* 37.

Formica foveolata, Mayr. *Beschreib. eing. neu. Ameis.*

Hab. South of France; Algeria.

38. FORMICA SYLVATICA.

Formica sylvatica, Oliv. *Encycl. Méth.* vi. 491. 3 ♀.

Latr. Hist. Nat. Fourm. 105.

Hab. France (forests in the South of France).

39. FORMICA PALLENS.

Formica pallens, Nyl. *Addit. Alter. Adno. Mon. Form. Bor.* 36. 2.

Hab. Messina.

40. FORMICA ATRICOLOR.

Formica atricolor, Nyl. *Addit. Alter. Adno. Mon. Form. Bor.* 36.

Hab. Messina.

41. FORMICA DALMATICA.

Formica Dalmatica, Nyl. *Addit. Alter. Adno. Mon. Form. Bor.* 37.

Hab. Dalmatia.

Species of India. Ceylon.—Singapore.—Malacca.—Java.—Sumatra.—Borneo.—Celebes.—China.—Philippine Islands.
(Sp. 42 & 43.)

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle flattened and vertical.

42. FORMICA CRINITA.

B.M.

Female. Length 4 lines.—Ochraceous: very closely resembling *F. umbrata*; the head as wide as the thorax; the eyes ovate, placed a little above the middle at the sides of the head, which is thinly covered with a fine silky down; the mandibles pubescent. Thorax ovate, thinly sprinkled above with long pale hairs; wings slightly fuliginous, the nervures testaceous. Abdomen ovate, covered with a thick, long, pale yellow pubescence; the scale subovate, fringed with pale hairs.

Hab. Northern India.

43. FORMICA TAPROBANE.

B.M.

Female. Length 2 lines.—Head, antennæ, thorax and legs red; abdomen black. Head subovate, the front convex, finely roughened and semi-opaque, very slightly emarginate behind. The thorax rugose, the scutellum and metathorax coarsely so; the wings hyaline, the stigma large and brown, the nervures pale testaceous; the anterior pair with one discoidal cell; the tarsi pale testaceous, the claw-joint black. Abdomen black, shining, and globose.

Hab. Ceylon.

This may possibly be the *F. abdominalis* of Latreille, but as the neurulation of the wings cannot be determined from his description, their identity is uncertain.

SUBDIVISION 2. (Sp. 44–95.)

Anterior wings with one marginal and two submarginal cells, the discoidal cells obsolete. The scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose.

44. FORMICA COMPRESSA.

B.M.

Formica compressa, *Fabr. Mant. Ins.* i. 307. 2 ♂; *Ent. Syst.* ii. 350. 2; *Syst. Piez.* 396. 2.

Oliv. Encycl. Méth. vi. 491.

Latr. Hist. Nat. Fourm. 111.

Formica compressa, *Hardw. Zool. Journ.* iv. 114.

St. Farg. Hym. i. 214. 17.

Jerdon, Madr. Journ. (1851) 119; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 103.

Smith, Journ. Proc. Linn. Soc. ii. 53.

Formica indefessa, *Sykes, Trans. Ent. Soc. Lond.* i. 104. pl. 13. f. 6.

Hab. India (Madras, Bengal); Hong Kong; North China (Shanghai); Philippine Islands; Australia?

Female. Length 6-7 lines.—Black: the flagellum, coxæ and femora, and the base of the abdomen beneath, usually more or less ferruginous; the head rather narrower than the thorax; the body shining; the wings hyaline, slightly fuscous anteriorly, with the nervures fusco-ferruginous; the scale emarginate above, subquadrate, with the lateral angles above rounded. Abdomen ovate.

Male. Length 4 lines.—Black: the head small, subtriangular above; the body beneath, the legs, mandibles and flagellum usually testaceous, differing in depth of colour; wings subhyaline, yellowish anteriorly.

Mr. Jerdon says, "This species is well known in India as the Black Ant; it is found in every part of the country; it lives in numerous societies under ground; the warriors are very numerous. At certain times great numbers of the winged males and females are seen at the mouth of the nest; they remain there for several days, when they take wing in vast numbers, always at night."

45. *FORMICA GIGAS.* Pl. III. fig. 30.

B.M.

Formica gigas, *Latr. Hist. Nat. Fourm.* 105. pl. 2. f. 6. ♂ major.

Smith, Proc. Linn. Soc. ii. 53.

Formica angusticollis, *Jerdon, Madras Journ. Lit. and Sc.* (1851) 120?

Worker minor. Length 8 lines.—More elongate and narrower than the larger worker; the head much narrower and not widened behind the eyes; the legs proportionably longer, the scale of the abdomen of the same conical form.

Female. Length 12 lines.—Of the same colour as the workers, the head scarcely as wide as the thorax; the eyes placed high on the head; the head elongate; the thorax ovate; the scutellum very convex; the scale of the abdomen deeply notched.

Male. Length 8 lines.—Blackish-brown: the coxæ, femora, apical joints of the tarsi and the flagellum pale testaceous; thorax elongate-ovate, shining on the disk; wings hyaline, the anterior pair yellowish in front; the head much narrower than the thorax.

Hab. India; Malacca; Singapore; Borneo.

46. FORMICA CINERASCENS.

Formica cinerascens, *Fabr. Ent. Syst.* ii. 353. 15 ♀ ; *Syst. Piez.* 401. 19.

Oliv. Encycl. Méth. vi. 494. 15.

Latr. Hist. Nat. Fourm. 280.

St. Farg. Hym. i. 214. 18.

Jerdon, Madr. Journ. Lit. and Sc. (1851) 123; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 106, 38.

Hab. India (Tranquebar and the Carnatic).

47. FORMICA ASSIMILIS.

Formica assimilis, *Jerdon, Madr. Journ. Lit. and Sc.* (1851) 125; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 42.

Hab. India (Malabar).

48. FORMICA CYLINDRICA.

Formica cylindrica, *Fabr. Ent. Syst. Supp.* 280. 31; *Syst. Piez.* 404. 36.

Latr. Hist. Nat. Fourm. 121. t. 4. f. 19.

Hab. India; Isle of France.

49. FORMICA ABDOMINALIS.

Formica abdominalis, *Latr. Hist. Nat. Ins.* 175. pl. 3. f. 13.

Hab. India.

50. FORMICA ELONGATA.

Formica elongata, *Fabr. Ent. Syst.* ii. 354.

Hab. Tranquebar.

51. FORMICA CONICA.

Formica conica, *Fabr. Ent. Syst. Supp.* 279. 27.

Latr. Hist. Nat. Fourm. 283.

Lasius conicus, *Fabr. Syst. Piez.* 418.

Hab. Tranquebar.

52. FORMICA NANA.

Formica nana, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 125 ♂; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 108. 44.

Hab. India (Mysore).

53. FORMICA RUFOGLAUCA.

Formica rufoglaucia, Jerdon, *Madr. Journ. Lit. & Sc.* (1851)
124; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 4.

Hab. India (the Carnatic).

54. FORMICA PHYLLOPHILA.

Formica phyllophila, Jerdon, *Madr. Journ. Lit. & Sc.* (1851)
125 ♀; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 43.

Hab. India.

55. FORMICA CARBONARIA.

Formica carbonaria, Latr. *Hist. Nat. Fourm.* 114. pt. 3. f. 8 ♀.

Hab. India.

56. FORMICA RUFICORNIS.

Formica ruficornis, Fabr. *Syst. Piez.* 397. 6.

Hab. India.

57. FORMICA STRICTA.

B.M.

Formica stricta, Jerdon, *Madr. Journ. Lit. & Sc.* (1851)
123 ♀; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 37.

Smith, Journ. Proc. Linn. Soc. ii. 53. 3.

Hab. India (Malabar); Borneo (Sarawak).

The insect which I take to be the *F. stricta* has the head square, or rather oblong; the insect is of an obscure blackish-green and covered with cinereous pile; the eyes are placed high at the sides of the head; the face from the base of the clypeus is obliquely truncated, the truncation being roughly striated; the thorax is narrowed posteriorly, and the metathorax has two little points or tubercles, one on each side; the scale of the peduncle is raised, incrassate, rounded and emarginate above; the legs shining black. The small worker has the head rounder, not truncated in front.

The female has the head truncated in front; the thorax and the abdomen elongate-ovate, the former smooth and shining above; the wings subhyaline, the nervures testaceous, with a narrow fuscous stain running along the course of the nervures; the insect tinged with green, the abdomen covered with glittering cinereous pile.

58. *FORMICA TIMIDA*.

Formica timida, Jerdon, *Madr. Journ. Lit. & Sc.* (1851) 122; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 36.

Hab. India (Malabar coast).

59. *FORMICA VAGANS*.

Formica vagans, Jerdon, *Madr. Journ. Lit. & Sc.* (1851) 124 ♀ ♂; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 41.

Hab. India (the Carnatic).

60. *FORMICA VELOX*.

Formica velox, Jerdon, *Madr. Journ. Lit. & Sc.* (1851) 124; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 106. 39.

Hab. India (Malabar).

61. *FORMICA SMARAGDINA*. Pl. III. fig. 3.

B.M.

Formica smaragdina, *Fabr. Spec. Ins.* i. 488. 2 ♀; *Mant.* i. 307. 3; *Ent. Syst.* ii. 350. 3; *Syst. Piez.* 397. 4.

Christ. Hym. t. 60. 1.

Gmel. Syst. Nat. Ins. ii. 2797. 20.

Oliv. Encycl. Méth. vi. 491. 5.

Latr. Hist. Nat. Fourm. 176. pl. 3. f. 18.

St. Farg. Hym. i. 218. 25.

Jerdon, *Madr. Journ. Nat. Hist.* (1851) 121 ♂ ♀ ♂; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 104.

Smith, Proc. Linn. Soc. ii. 53.

Formica viridis, Kirby, *Trans. Linn. Soc.* xii. 477 ♀.

Hab. India (Malabar); Ceylon; Sumatra; Celebes; Philippine Islands.

This ant is plentiful in Malabar and the wooded parts of India; it forms a nest of living leaves which it draws together without detaching from the branch, and unites with a fine white web; sometimes the nest is a foot in diameter, but usually smaller. These societies are very numerous. (*Jerdon, Madras Journ.*)

The short palpi and somewhat different neuration of the wings will probably render it necessary to remove this species from the genus *Formica*, in which for the present we retain it.

62. *FORMICA ARDENS*.

Female. Length 8-9 lines.—Black; subopake: the flagellum and two or three of the apical joints of the tarsi pale rufo-testaceous; the clypeus, mandibles, coxæ, femora and the abdomen more or less obscure rufo-piceous; the mandibles punctured and

grooved at their apex, furnished with fine stout teeth; the clypeus carinated in the middle; the head delicately shagreened, a little wider than the thorax and emarginate behind. The mesothorax with a central longitudinal slightly impressed line which extends from base to apex; a similarly impressed bent line is situated half-way between the centre and the tegulæ; wings fusco-hyaline, clearest towards their apical margins; the nervures fusco-ferruginous. The scale of the peduncle subquadrate, rounded, and emarginate above; the abdomen has a few scattered short pale hairs, and the apical margins of the segments narrowly rufo-piceous.

Hab. India (Deccan). (Coll. East India House.)

63. FORMICA IMPETUOSA.

Worker. Length 6 lines.—Opaque-black, with the flagellum and two apical joints of the tarsi ferruginous: head large, much wider than the thorax, deeply emarginate behind; the clypeus with a central longitudinal carina, which is produced, and forms a small tooth in the middle of the anterior margin, which is straight. The head and thorax are delicately shagreened, the latter elongate and compressed posteriorly; legs elongate, smooth and shining, destitute of pubescence, or with a few short ferruginous hairs on the tibiæ at their apex beneath, and also a few on the tarsi. Abdomen ovate; the scale of the peduncle incrasate, narrow, rounded in front, and flat and perpendicular behind, its margin slightly notched above.

Hab. Bombay. (Coll. East India House.)

64. FORMICA CALLIDA.

Worker. Length 3–5 lines.—Very variable in colour: some individuals are black, with the flagellum, legs, thorax beneath, scale of the peduncle, and base of the abdomen beneath more or less ferruginous; other individuals have the head, thorax, scale of the peduncle and legs pale ferruginous: the larger and smaller individuals also vary in the relative proportions of the head and thorax, but in all it is oblong-quadrate, with the angles rounded, wider than the thorax and emarginate behind; the clypeus with a longitudinal carina in the middle; a smooth abbreviated line between the antennæ. Thorax compressed; legs elongate and slender. Abdomen ovate; the scale of the peduncle oblong, narrowed to its base, and rounded above.

Hab. India (Deccan). (Coll. East India House.)

Probably the worker of *F. compressa*, being the small form of that species.

65. *FORMICA LUTEA*.

B.M.

Female. Length 5 lines.—Yellow: the head oblong, widest at the vertex, which is slightly emarginate; eyes ovate, placed rather high on the sides of the head; the clypeus subcarinate in the middle, slightly emarginate anteriorly; the mandibles stout, triangular, toothed on their inner margin, the teeth black. Thorax oblong-ovate, very smooth and shining above; the point of attachment of the wings black; the scale of the peduncle ovate, emarginate above. Abdomen ovate, smooth and shining; the head, thorax and abdomen sprinkled with long, erect, pale hairs.

Hab. Northern India.

66. *FORMICA GIBBOSA*. Pl. II. fig. 2.

B.M.

Worker. Length 3 lines.—Head, scape of the antennæ, thorax and legs fusco-testaceous; the flagellum, mandibles, tarsi and abdomen pale testaceous, varying sometimes in being almost entirely pale. The antennæ a little longer than the head and thorax; eyes black and prominent, placed laterally about the middle of the head. Thorax not so wide as the head, the prothorax rounded at the sides, the meso- and metathorax narrower, the latter flattened and oblong-quadrate above, the lateral margins raised; behind obliquely truncate; a deep strangulation between the meso- and metathorax, the latter being elevated; the legs slightly pubescent. Abdomen globose, and covered with pale golden-yellow pubescence; the scale of the peduncle incrassate, its anterior face rounder or concave, flattened, and slightly hollowed out behind.

Hab. India?

This species constructs its nest on leaves, the texture of which closely resembles that of many small species of Vespidae; in fact it is quite possible that it may take possession of a Vespidious nest, and adapt it to its own purposes: the worker greatly resembles in form that of the European species *Formica lateralis*.

67. *FORMICA LONGIPES*.

Formica longipes, Jerdon, *Madr. Journ. Lit. & Sc.* (1851) 122; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 35 (1854).

Hab. India (in forests). Malacca.

68. *FORMICA VARIEGATA*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Reddish-brown, variegated with yellow markings: the head oblong, widest at the vertex; the

eyes ovate, situated a little above the middle at the sides of the head; the vertex slightly emarginate; the clypeus truncate in front, and having a slightly elevated central carina; the mandibles stout, shining, with seven acute teeth on their inner margin; the flagellum and tips of the scape pale ferruginous; the head beneath and the region of the clypeus paler than the vertex, which is opaque. Thorax and legs pale ferruginous; the mesothorax darker, and sometimes a darker tinge on the scutellum and metathorax; the disk of the thorax opaque; wings flavo-hyaline, the nervures pale rufo-testaceous. Abdomen ovate; the base and a spot on each side of the two following segments pale rufo-testaceous; the maculae on the second segment frequently united in the middle; the scale of the peduncle pale, subovate, and emarginate above; the abdomen sprinkled with long pale hairs, and with the middle beneath pale.

Worker. Length $3\frac{1}{2}$ –4 lines.—Differs from the female in having the head large, much wider than the thorax, the thorax much attenuated posteriorly, and the scale of the peduncle not emarginate; the head is also darker in colour and more deeply emarginate behind; the abdomen is usually only pale at the base and on each side of the second segment.

Hab. Ceylon; Singapore.

This species very much resembles the *F. serguttata* of Fabricius.

69. FORMICA MITIS.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—The head, scape and abdomen fusco-testaceous. The head oblong, not wider than thorax; the eyes ovate, of moderate size, placed high on the sides of the head; the clypeus carinate in the middle, the anterior margin rounded; the clypeus paler than the vertex. Thorax elongate, much compressed behind; the disk of the thorax arched lengthways; the legs palest at their base and apex; the scale of the peduncle somewhat conical, pointed above; the base of the abdomen pale, the margins of the segments fringed with a few long pale hairs.

Hab. Ceylon.

70. FORMICA VENTRALIS.

B.M.

Female. Length 6 lines.—Black: the flagellum, mandibles, anterior margin of the face, and the head behind more or less ferruginous; the thorax and base of the abdomen pale rufo-testaceous, the coxae and femora of the same colour; the posterior margins of the first, second and third segments of the abdomen pale rufo-testaceous; the scale of the peduncle pale, with its

upper margin rounded and entire; wings hyaline, the superior pair yellowish along their anterior margin, the nervures pale rufo-testaceous.

Hab. Ceylon.

71. *FORMICA BACCHUS*.

B.M.

Worker. Length $4\frac{1}{2}$ lines.—Black: the flagellum, thorax, legs and scale of the peduncle rufo-testaceous; the tibiæ and basal joint of the tarsi more or less dusky; head large and cordate; eyes ovate, placed above the middle at the sides of the head; the head opaque; the clypeus subcarinate in the middle and shining, as well as the mandibles, the latter armed with six stout teeth; the extreme base of the scape pale testaceous. Thorax much narrower than the head, rounded anteriorly and compressed behind. Abdomen: the scale incrassate, narrowed to a thin edge at its upper margin, which is rounded; the scale is narrow, rounded in front and straight behind; the abdomen oblong-ovate; the head, thorax and abdomen have a few scattered, long, erect pale hairs.

Hab. Ceylon.

72. *FORMICA OBLONGA*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Obscure rufo-testaceous, the head anteriorly and the abdomen being darkest; the clypeus and a space between the antennæ, as well as the flagellum, pale rufo-testaceous; the mandibles with seven acute teeth; the clypeus truncate anteriorly. Thorax elongate-ovate, smooth and shining, the disk darkest; the legs pale rufo-testaceous; the femora compressed and semitransparent. The scale of the peduncle ovate, very faintly notched above; the abdomen elongate-ovate, smooth and shining; the abdomen wider than the thorax and head, the two latter of about equal width.

Hab. Birmah.

73. *FORMICA TINCTA*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Rufo-testaceous, irregularly stained with black; the front of the head with a black spot enclosing the ocelli; the mandibles dark rufo-piceous, armed with seven sharp teeth; the head the same width as the thorax. Thorax elongate-ovate, very smooth and shining; the sides of the disk of the thorax slightly fuscous; wings yellowish-hyaline, with the nervures pale ferruginous. Abdomen ovate, very smooth and shining; the basal segment and the apical margins of the

three following, and the base of the fifth black; sprinkled with a few pale ferruginous hairs; the scale ovate, emarginate above.

Hab. Birmah.

This species somewhat resembles the *F. variegata*, but it is a larger and broader insect; the scale of the peduncle is of a different form, being broader; the thorax is perfectly oval, not narrow behind, and it is also much more polished and shining.

74. FORMICA DILIGENS.

Female. Length 9 lines.—Dark rufo-piceous; the antennæ, mandibles, thorax at the sides and beneath, the metathorax and legs ferruginous. In form closely resembling *Formica ligniperda*; the head shining; the antennæ, the anterior margin of the face and clypeus, and the mandibles ferruginous. The wings subhyaline, the nervures and tegulæ pale ferruginous. Abdomen shining, pale ferruginous beneath; the scale of the peduncle subquadrate, slightly emarginate its entire width above.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

75. FORMICA IRRITANS.

B.M.

Worker. Length $2\frac{1}{2}$ –6 lines.—Head and abdomen nigro-fuscous; antennæ, thorax, abdomen, scale of the peduncle and the legs ferruginous. Elongate and slender; head ovate; the scape black, with the apex ferruginous. Thorax elongate, compressed, the prothorax slightly dilated at the sides; the scale of the peduncle incrassate, rounded in front and truncate behind. Abdomen ovate; the entire insect sprinkled with erect pale hairs.

Worker minor, length 3 lines; the antennæ entirely ferruginous.

Hab. Malacca.

76. FORMICA BADIA.

Worker. Length $2\frac{1}{2}$ – $3\frac{1}{2}$ lines.—Chestnut-brown: closely resembling *Polyergus rufescens*, but with the mandibles toothed; head subovate; the eyes ovate, placed high on the sides of the head towards the vertex. Thorax rounded in front, compressed behind; the metathorax obliquely truncated. Abdomen oblong-ovate, the apex fuscous; the scale of the peduncle incrassate, slightly rounded in front and flattened behind.

Hab. Singapore; Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

77. FORMICA GRACILIPES.

B.M.

Worker. Length 2 lines.—Pale ferruginous: abdomen dark

rufo-piceous, with the base palest; in some examples the colour is pale brown; antennæ longer than the body; head ovate, narrowed behind, and wider than the thorax; the eyes black and prominent. Thorax elongate, compressed, the prothorax narrowed into a slender neck; legs very much elongated, the posterior pair one-third longer than the insect, the tibiæ and tarsi pale testaceous. The abdominal scale incrassate, rounded in front and truncate behind; the abdomen short and ovate.

Hab. Singapore.

78. *FORMICA ARROGANS.*

B.M.

Worker. Length 4 lines.—Fusco-testaceous: mandibles black; the flagellum pale testaceous; the vertex deeply emarginate; the head more than twice the width of the thorax. Thorax compressed posteriorly; the legs pale rufo-testaceous; scale incrassate, rounded in front, truncated posteriorly. Abdomen ovate, the posterior margin of the segments pale rufo-testaceous.

Hab. Singapore.

79. *FORMICA CAMELINA.*

B.M.

Worker. Length 5 lines.—Black, elongate and slender; the head narrowed behind into a sort of neck; the eyes round, placed forwards at the sides of the head, nearly opposite the insertion of the antennæ. Thorax much narrowed in front, compressed in the middle, with the metathorax swollen and elevated above the prothorax; the legs elongate and sprinkled with long pale hairs. Abdomen ovate, pointed at the apex, and sprinkled with pale glittering hairs; the scale of the peduncle incrassate, somewhat pear-shaped.

Hab. Singapore.

80. *FORMICA FESTINA.*

B.M.

Female. Length 9–10 lines.—Black and shining; thorax beneath, the metathorax, legs and petiole of the abdomen pale ferruginous; the abdomen piceous beneath. Head oblong-quadrate, the mandibles and anterior margin of the face rufo-piceous; the flagellum fulvous. Thorax: beneath, the sides, the metathorax and legs pale ferruginous; the scale subovate and emarginate above; the apical margins of the segments of the abdomen rufo-piceous; beneath entirely rufo-testaceous.

Hab. Borneo (Sarawak); Java; China.

Closely resembling the *Formica ligniperda*; apparently the exotic form of that species.

81. FORMICA MISTURA.

Female. Length $6\frac{1}{2}$ lines.—Black: the hinder margin of the vertex, the coxæ, femora and tips of the tarsi, the scale of the peduncle and the base of the abdomen more or less obscurely ferruginous. Head: the mandibles, clypeus and anterior angles of the face punctured; the clypeus slightly emarginate anteriorly; the flagellum fusco-ferruginous. Thorax oblong-ovate; wings subhyaline, the nervures rufo-testaceous. Abdomen ovate; the scale of the peduncle subovate with a slight notch above. Head, thorax, legs and abdomen with a thin fulvous pubescence.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

82. FORMICA PILOSA.

Worker. Length 3 lines.—Black, densely covered with a fine silky cinereous pile. Head much wider than the thorax; eyes ovate, placed laterally rather high on the head; the anterior part of the clypeus truncate, the sides of the face produced beyond its anterior margin; a shallow fovea on the front. Thorax compressed behind. Abdomen ovate, covered with short pale pubescence; the scale of the peduncle incrassate, terminating in a blunt point above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

83. FORMICA RUFICEPS.

Worker. Length 4 lines.—Black: the head and the thorax in front ferruginous; the head smooth, shining, and much wider than the thorax; the mandibles and scape black, the apex of the former ferruginous; the flagellum pale rufo-testaceous. The thorax much compressed behind; the tips of the coxæ, femora and tibiæ, and the tarsi ferruginous. Abdomen smooth and shining; the scale of the peduncle ovate, its apex acuminate; the legs and the apex of the abdomen with a thin short pale pubescence.

Worker minor only differs in size and in having the mandibles ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

84. FORMICA FERVENS.

Worker. Length 4 lines.—Head and abdomen black, obscurely rufo-piceous; thorax and legs pale ferruginous. The head subopaque, with the clypeus and mandibles shining; the flagellum pale ferruginous; the anterior margin of the clypeus slightly

emarginate. Thorax usually more or less fuscous in front, compressed behind. Abdomen shining, the apical margins of the segments narrowly testaceous; the scale of the peduncle ovate and ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

85. *FORMICA IRRITABILIS.*

B.M.

Worker. Length 4 lines.—Head, thorax, and scale of the abdomen, ferruginous, the legs rufo-fuscous; abdomen nearly black; the scape black, with the extreme base and apex as well as the flagellum ferruginous, the latter more or less fuscous above; the vertex has sometimes a fuscous stain; the mandibles nigro-piceous, their apex ferruginous. Thorax compressed behind, much narrower than the head, both thinly sprinkled with erect reddish hairs; the legs nigro-fuscous, with the base and apex of the joints, and sometimes with the coxæ and apical joints of the tarsi, ferruginous. Abdomen: the scale oblong-ovate, pointed above; the apical margins of the segments with a thin fringe of reddish-yellow hairs.

Hab. Borneo (Sarawak).

86. *FORMICA SEDULA.*

Worker. Length 5 lines.—Head and thorax opaque-black, the mandibles and legs shining black; the abdomen chestnut-red. The mandibles with five stout teeth, and with their apex striated; the head much wider than the thorax, deeply emarginate behind; the flagellum obscurely ferruginous. Thorax compressed behind; the trochanters and apical joints of the tarsi ferruginous. Abdomen ovate; the scale of the peduncle subquadrate, slightly emarginate above; the abdomen thinly sprinkled with reddish pubescence, and a few scattered black hairs on the head and thorax.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

87. *FORMICA EXASPERATA.*

Worker. Length $5\frac{1}{2}$ lines.—Head, thorax, and scale of the peduncle, blood-red, the abdomen black; a dark stain in front of the anterior stemma, and usually a second at the insertion of the antennæ; these stains sometimes obsolete; the mandibles black, stout, punctured and strongly toothed; the head much wider than the thorax and deeply emarginate behind. Thorax compressed behind, usually more or less stained at the sides; the tibiæ and tarsi more or less fuscous. Abdomen with the

apical margins of the segments more or less rufo-piceous; the scale of the peduncle ovate and entire; a thin pale reddish pubescence on the head, thorax and legs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

88. *FORMICA TENUIPES.*

B.M.

Female. Length 4 lines.—Rufo-castaneous, smooth and shining; mandibles stout, armed with five strong black teeth; antennæ pale rufo-testaceous. Thorax ovate, smooth and shining; wings hyaline, the nervures pale testaceous; scale quadrate, emarginate above; the legs pale rufo-testaceous; the femora much compressed. Abdomen ovate, smooth and shining.

Hab. Borneo (Sarawak).

89. *FORMICA PALLIDA.*

B.M.

Worker. Length $2\frac{1}{2}$ –3 lines.—Pale rufo-testaceous, smooth, shining and slightly pilose; the head much wider than the thorax, the vertex widely and deeply emarginate; mandibles dark rufo-piceous; the flagellum and legs paler than the rest of the body; the thorax compressed behind; the scale narrow, elongate-ovate; abdomen subglobose and thinly sprinkled with long pale hairs; the head and thorax also slightly pubescent.

Hab. Borneo (Sarawak).

This species varies in the colouring of different individuals: some examples have the head as well as the abdomen of a deeper hue.

90. *FORMICA VIGILANS.*

B.M.

Worker. Length $5\frac{1}{2}$ lines.—Head, thorax, and scale of the abdomen, blood-red; the abdomen and legs black; the antennæ, eyes and mandibles black; the face anteriorly, the clypeus and mandibles, smooth and shining, the latter with five stout teeth; the flagellum obscurely rufo-fuscous; the head posteriorly deeply emarginate and opaque; the thorax opaque, compressed; the coxæ, extreme base of the femora and tibiæ, and the apical joints of the tarsi, ferruginous; the scale ferruginous, ovate and entire; the extreme base of the abdomen ferruginous. The entire insect thinly sprinkled with erect black pubescence.

Hab. Borneo (Sarawak).

In general form closely resembling *F. compressa*; the thorax is shorter, the legs stouter, and *F. compressa* is not pubescent.

91. *FORMICA PLACIDA*.

Female. Length 6 lines.—Head, antennæ, thorax, legs and scale of the peduncle, ferruginous; the legs and thorax beneath palest; abdomen brown-black, smooth and shining; the head scarcely wider than the thorax, both slightly shining; wings subhyaline, the nervures pale testaceous; scale of the peduncle ovate, with a deep notch above. Abdomen ovate and impunctate.

Hab. Java. (Coll. East India House.)

92. *FORMICA TRIFASCIATA*.

Female. Length 4 lines.—Ochraceous, with three fuscous stripes on the thorax, the central one abbreviated; the abdomen fuscous, with the apical margins of the segments ochraceous; the node of the peduncle incrassate, oblong, narrowed and slightly notched at the apex above; the tibiæ and tarsi paler than the femora; wings fusco-hyaline, the first submarginal cell elongate, of nearly equal width throughout, very slightly widened at the apex; the second submarginal cell complete, extending to the apex of the wing; the head small, much narrower than the thorax, with the eyes prominent.

Hab. Java. (Coll. East India House.)

93. *FORMICA SINGULARIS*.

Worker. Length 6 lines.—Head ovate, red; antennæ slender, as long as the thorax, and black; clypeus subcarinate; eyes black and ovate. Thorax black, elongate, narrow, widest in front, and narrowest in the middle; the metathorax convex, evenly rounded from base to apex; the legs elongate; the thorax and legs covered with a fine silky pile, and sprinkled with a few long erect pale hairs. Abdomen black, ovate, somewhat pointed at the apex, covered with a fine silky slightly golden pile, and sprinkled with long erect pale hairs; the scale of the peduncle forming a blunt rounded node.

Hab. Java.

This probably belongs to a different genus, or at least to a very distinct section, but, only being acquainted with one sex, I leave it at present in the genus *Formica*; the palpi are more elongate than is usual, the joints of the antennæ are much longer and more slender, the insect having very much the appearance of a species of *Dolichoderus*.

94. *FORMICA LUCTUOSA*.

Female. Length $7\frac{1}{2}$ lines.—Shining black: the vertex sub-

opaque; the head deeply emarginate behind; the anterior margin of the clypeus truncate. Thorax ovate; the mesothorax with a longitudinal impressed line on each side; the metathorax delicately shagreened; wings subhyaline, the nervures rufo-testaceous, with a fuscous stain running along their course. Abdomen ovate, smooth and shining; the scale of the peduncle quadrate, the upper margin entire; the vertex of the head, the sides of the pro- and metathorax with a few reddish-brown hairs.

Hab. Sumatra.

95. *FORMICA QUADRISECTA.*

B.M.

Female. Length 7 lines.—Head and thorax dark rufo-fuscous; abdomen brown; the former oblong, widest at the vertex, which is deeply emarginate behind; mandibles armed with five strong teeth; the flagellum pale rufo-testaceous. Thorax oblong-ovate and narrow; the metathorax truncate, the truncation slightly oblique; the wings subhyaline, with a yellow tinge, the nervures pale testaceous; the legs rufo-piceous. Abdomen ovate; the scale of the peduncle quadrate, the superior margin slightly rounded.

Hab. Philippine Islands.

Species of Africa.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells; the discoidal cells obsolete. The scale of the peduncle usually incassate, generally much more so than in the first subdivision, sometimes subquadrate, occasionally subnodose. (Sp. 96–121.)

Note.—We are acquainted with several species belonging to the first subdivision, which are found in North Africa; these, however, are also common to Europe, and are included in the European series; they are, *F. viatica*, *lateralis*, *pubescens*, *opaca* and *marginata*.

96. *FORMICA MACULATA.*

B.M.

Formica maculata, *Fabr. Spec. Ins.* i. 491. 15; *Ent. Syst.* ii. 356. 25; *Syst. Piez.* 403. 29. (Type in *Mus. Dom. Banks.*)

Oliv. Encycl. Méth. vi. 495. 22.

Latr. Hist. Nat. Fourm. 283.

St. Farg. Hym. i. 215. 19.

Hab. Africa.

The typical specimen in the Banksian Collection is a large

form of the worker, 6 lines in length; the head much wider than the thorax or abdomen, and deeply emarginate behind; eyes ovate, placed inwards opposite the termination of the carinæ which run upwards from the base of the clypeus; the clypeus with a central longitudinal carina; the flagellum ferruginous; the thorax and legs rufo-testaceous, the disk of the former more or less black or fuscous above; much compressed towards the apex; the tibiæ and tarsi more or less fuscous, the former sometimes black. Abdomen ovate, with a pale testaceous macula on each side of the three basal segments.

Worker minor. Length 5 lines, some examples smaller.—This form differs in having the head elongate, about the same width as the abdomen, and the legs and thorax are usually paler than in the larger form; in some examples the head and thorax are pale red. The female resembles the smaller form of the worker, in having the head elongate, very little wider than the thorax; the thorax elongate-ovate; the abdomen ovate, the maculation very dark and decided.

Amongst a series of specimens of this species from Port Natal, some of the small forms of the worker have the head, thorax and legs entirely pale rufo-testaceous; specimens of the large worker also occur with the head fuscous anteriorly, and the vertex red; the thorax is also occasionally entirely red. Specimens of what is in all probability the male, have the head very small, the eyes black, ovate and prominent, the whole body of the insect being pale rufo-testaceous; the head rounded behind the eyes, and produced before them, the sides being parallel; the anterior margin of the clypeus angular. The thorax elongate-ovate; the wings flavo-hyaline; the tibiæ fuscous. Abdomen lanceolate, with the apical segments more or less fuscous.

97. *FORMICA VIRESCENS*. Pl. III. figs. 24–27. B.M.

Formica virescens, *Fabr. Syst. Ent.* 392. 9 ♂; *Spec. Ins.* i. 490. 13; *Mant. Ins.* i. 308. 16; *Ent. Syst.* ii. 355. 23; and *Cab. Mus. Dom. Banks*.

Oliv. Encycl. Méth. vi. 494. 20.

Gmelin, Syst. Nat. Ins. ii. 2800. 32.

Formica longinoda, *Latr. Hist. Nat. Fourm.* 184 ♂.

Lasius virescens, *Fabr. Syst. Piez.* 417. 8.

Formica macra, *Guér. Voy. Coq. Zool.* ii. 202; *Atlas*, t. 8. f. 1, 1 a, 1 b ♂.

This species we consider to be the African and Australian representative of the *F. smaragdina*; the species is rather smaller, the female has shorter wings, the nervures blacker, and with a fuscous stain along their course; it also differs from *F. smarag-*

dina in having the scale or node of the abdomen rather longer, and in its being elevated anteriorly. The worker of *F. virescens* has the head more convex behind the eyes than in *F. smaragdina*, and the petiole of the abdomen is shorter, and of a somewhat different form.

The male of *F. virescens* is 3 lines in length, of a pale rufo-testaceous colour, varying in depth in different specimens, and is covered with short thin pale pubescence; the head with the vertex subquadrate, slightly narrowed posteriorly, with the angles rounded; the eyes larger than in the female; the first joint of the flagellum clavate, nearly as long as the two following, the rest being subovate and of nearly equal length. Thorax subovate, narrowed posteriorly; the wings ample, hyaline, with the nervures ferruginous. The legs very slender and elongate. Abdomen rounded, the petiole narrowed at the base.

Hab. Africa; Australia.

98. FORMICA CRUENTATA.

Formica cruentata, Latr. *Hist. Nat. Fourm.* 116. pl. 3. f. 10 ♂.
Formica pilosa, Oliv. *Encycl. Méth.* v. 498. 39?

De Geer, *Ins.* vii. 612. pl. 45. f. 13, 14?

Hab. Africa?

This species very closely resembles, if indeed it be not identical with, the *F. opaca* of Nylander.

99. FORMICA OBTUSA.

B.M.

Worker. Length 5 lines.—Head and thorax anteriorly obscure red, otherwise black and shining; the flagellum and base of the scape ferruginous. Head very large, much wider than the thorax; the ocelli very minute and distinct. Thorax rounded in front, truncate behind, and gradually narrowed and compressed, being somewhat wedge-shaped; divided above by two transverse sutures. Abdomen ovate, covered with pale golden pubescence; the node of the peduncle incrassate, above emarginate.

Hab. Egypt.

This species is remarkable for its short broad appearance, and for having the ocelli distinct; in the type-specimen the greater portion of the pubescence is rubbed off.

100. FORMICA MICANS.

Formica micans, Nyl. *Fourm. Fr. et d'Alg. Ann. Sc. Nat.* v. 55. 4 ♂.

Hab. Algeria.

101. FORMICA THORACICA.

Formica thoracica, *Fabr. Syst. Piez.* 397. 5 ♀.

Hab. Barbary.

This is probably a pale form of *F. ligniperda*.

102. FORMICA BICOLOR.

Formica bicolor, *Fabr. Ent. Syst.* ii. 351. 5 ♂; *Syst. Piez.* 398. 8.

Latr. Hist. Nat. Fourm. 123.

Lucas, Explo. Sc. Algér. iii. 302.

Hab. Barbary.

103. FORMICA SERICEA.

B.M.

Formica sericea, *Fabr. Ent. Syst. Supp.* 279. 9.

Latr. Hist. Nat. Fourm. 117. pl. 3. f. 17 ♀; *St. Farg. Hym.* 217. 24.

Lasius sericeus, *Fabr. Syst. Piez.* 416. 4.

Hab. Senegal.

104. FORMICA LONGICORNIS.

Formica longicornis, *Latr. Hist. Nat. Fourm.* 113 ♀.

Hab. Senegal.

105. FORMICA AURULENTA.

Formica aurulenta, *Latr. Hist. Nat. Fourm.* 114. pl. 3. f. 9 ♂.

Hab. Senegal.

106. FORMICA VIVIDA.

B.M.

Worker. Length $3\frac{1}{4}$ lines.—Jet-black, smooth and shining; head large, much wider than the thorax, deeply emarginate behind; the anterior margin of the clypeus slightly rounded and entire; the mandibles stout, strongly toothed within, and very obscurely ferruginous at their apex. Thorax rounded in front, compressed behind and obliquely truncate at the apex; legs wanting. Abdomen subglobose; the scale of the peduncle ovate, its upper margin entire; the head, thorax and abdomen thinly sprinkled with pale erect hairs.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

107. FORMICA RUBRIPES.

B.M.

Formica rubripes, *Latr. Hist. Nat. Fourm.* 112 ♂.Formica barbara, *Drury, Ill. Exot. Ins.* pl. 38. f. 3 ♂ (nec *Linn.*).*Hab.* Africa (Sierra Leone).

108. FORMICA LABORIOSA.

B.M.

Female. Length 5 lines.—Jet-black, smooth and shining; head oblong, a little wider than the thorax, slightly narrowed anteriorly; the flagellum obscurely rufo-testaceous; the anterior margin of the clypeus entire; the mandibles obscurely ferruginous. Thorax ovate; wings hyaline, the nervures pale rufo-testaceous. Abdomen ovate; the scale of the peduncle sub-ovate, the superior margin rounded.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)This is probably the female of *F. vivida*.

109. FORMICA FÆTENS.

Formica fætens, *Fabr. Ent. Syst.* ii. 354. 18.*Hab.* Guinea.

This is probably a species of *Ponera*, closely allied to *Ponera Abyssinica* of Guérin.

110. FORMICA GUINEENSIS.

Formica guineensis, *Fabr. Ent. Syst.* ii. 357. 31; *Syst. Piez.* 404. 37.*Latr. Hist. Nat. Fourm.* 285.*Hab.* Guinea.

111. FORMICA FULVO-PILOSA.

B.M.

Formica fulvo-pilosa, *De Geer, Hist. Ins.* vii. 612. pl. 45. f. 13, 14.Formica pilosa, *Oliv. Encycl. Méth.* vi. 498. 39.Formica rufiventris, *Fabr. Syst. Piez.* 409. 57.*Hab.* Cape of Good Hope.

112. FORMICA VESTITA.

B.M.

Female. Length 5 lines.—Head and thorax rufo-fuscous; the head anteriorly, mandibles, antennæ, cheeks, legs, and sides of the thorax, ferruginous; the head, thorax and abdomen covered with a fine silky pale golden down, changing, in different lights, in brilliancy; the head rather narrower than the thorax; the ab-

domen large, ovate, and wider than the thorax ; scale of the peduncle small, ovate, and slightly marginate above.

Hab. Port Natal.

113. FORMICA NATALENSIS.

B.M.

Female. Length 7 lines.—Shining black, with the head above and the disk of the thorax opaque. Head elongate; the clypeus carinated longitudinally; the mandibles obscurely ferruginous; the flagellum rufo-testaceous; the eyes placed rather high on the back of the head; a smooth impressed line runs from the anterior stemma to the base of the clypeus. The mesothorax with a deeply impressed line in the middle running backwards one-third of its length; a finer and more slightly impressed line runs on each side over the tegulæ; a few scattered punctures on the disk; the metathorax rounded behind; the apical joints of the tarsi ferruginous; the wings fusco-hyaline, palest towards their apex, the nervures testaceous, the stigma dark brown. Abdomen ovate; the apical margins of the segments narrowly pale testaceous; the scale of the peduncle subquadrate, and emarginate above.

Worker major. Length 6 lines.—Coloured like the female, only differing in having the mandibles black; head very large, much wider than the thorax and deeply excavated behind; thorax widest in front, narrowed behind and obliquely truncate at the apex; the scale of the peduncle narrower than in the female, its margin above entire.

Worker minor. Length 5 lines.—Coloured like the large worker, but having the mandibles ferruginous at the apex; slender and elongate; the head oblong-ovate, and slightly emarginate behind; the antennæ elongate and slender. Thorax elongate, narrower than the head, widest in front; the scale incrassate, narrow and subconical, its apex somewhat pointed. Abdomen ovate.

Male. Length $4\frac{1}{2}$ lines.—In form resembling the male of *F. rufa*, in colour agreeing with the other sexes; the head narrower than the thorax, the legs slender and elongate, the tarsi pale rufo-testaceous; scale small, subconical, and slightly notched above. Abdomen elongate-ovate.

Hab. Port Natal.

Mr. R. W. Plant collected a number of each sex of this species from the nest, constructed in old decaying trees.

114. FORMICA CUSTODIENS.

B.M.

Worker. Length 2 lines.—Head, thorax and legs ferruginous,

thorax beneath, and the scale, pale; head large, much wider than the thorax or abdomen, the thorax much compressed behind; the scale narrow, elongate, and rounded above.

Worker minor. Length $2\frac{1}{2}$ lines.—Differs from the large worker in having the head narrower and the thorax more elongate; it is also rather darker-coloured.

Hab. St. Helena.

120. FORMICA SERICATA.

Formica sericata, Guér. *Voy. Coq. Zool.* ii. 203; *Atlas, Ins.* pl. 8. f. 2, 2 A, 2 B, 2 C, 2 D ♀.

Hab. New Hebrides.

121. FORMICA ZONATA.

Formica zonata, Guér. *Voy. Coq. Zool.* ii. 205 ♀.

Hab. Port Praslin (New Ireland).

Species of Australia and Tasmania.

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle vertical and compressed. Workers with distinct ocelli. (Sp. 122, 123.)

Note.—We have seen only two females belonging to this subdivision, from Australia.

122. FORMICA DETECTA.

B.M.

Female. Length 6 lines.—Nigro-fuscous: the antennæ and legs ferruginous. Head fusco-ferruginous; the sides, beneath, the face anteriorly and the mandibles ferruginous; rather wider than the thorax, and emarginate behind, with an impressed line running from the anterior stemma to the base of the clypeus. Thorax ovate, thinly covered on the disk with short reddish-brown pubescence; wings subhyaline, yellowish along the anterior margin of the superior pair and towards their base; the nervures rufo-fuscous. Abdomen ovate, the apical margins of the segments rufo-piceous; covered with a fine grey silky pile; the scale of the peduncle subovate, compressed, with the margin entire.

Hab. Australia (Hunter River).

123. FORMICA MACROCEPHALA.

B.M.

Formica macrocephala, *Erichs. Wiegmann. Archiv* (1842), 229, 259 ♀.

Hab. Tasmania.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells; the discoidal cells obsolete. The ocelli usually obsolete in the workers. (Sp. 124–138.)

124. FORMICA? ERYTHROCEPHALA.

B.M.

Formica erythrocephala, *Fabr. Ent. Syst.* ii. 351. 6.

Atta erythrocephala, *Fabr. Syst. Piez.* 423. 5.

Hab. New Holland.

The typical specimen of the species is in the Banksian Collection; it is a very slender, attenuated form of a worker ant; the head is a little wider than the prothorax, elongate, and of a blood-red colour; the antennæ red, with the scape obscurely so; the mandibles porrect and finely denticulate on their inner edge. Thorax elongate, narrowed towards the head; the legs elongate, slender, and with the knees and tarsi red. The abdomen small, ovate, and subpetiolate; the scale of the peduncle small, incrassate, rounded in front, and truncate behind.

125. FORMICA INTREPIDA.

B.M.

Formica intrepida, *Kirby, Trans. Linn. Soc.* xii. 477 ♀.

This species is probably the large form of the worker, the *F. basalis* being the smaller form; this can only be decided by an examination of a community. *F. intrepida* has the head, the basal joint of the antennæ, and the abdomen black; the thorax, scale, and legs red; the scale is ovate and entire above; the extreme base of the scape is red; the inner margin of the mandibles is slightly rufo-piceous, and armed with six teeth; the length of the insect from the tip of the mandibles to the apex of the abdomen is 7 lines.

Hab. Australia.

126. FORMICA AGILIS.

B.M.

Worker. Length 5 lines.—Head and abdomen black; antennæ, thorax and legs ferruginous. Head oblong, rounded behind; eyes ovate and prominent, placed backwards on the sides of the head; the clypeus with a central longitudinal carina,

its anterior margin, as well as that of the mandibles, ferruginous; the mandibles large, stout, triangular, and furnished with seven acute teeth within; antennæ long and slender. Thorax elongate, narrow, and forming anteriorly a short neck; the posterior portion compressed, the metathorax rounded behind; legs elongate and slender. Abdomen ovate; the scale incrassate and nodose; the abdomen thinly sprinkled with long pale pubescence; the head and thorax, legs and antennæ thinly covered with short pale pubescence.

Hab. New Holland.

127. *FORMICA CONSECTATOR.*

B.M.

Female. Length 5 lines.—Black, smooth and shining. Head oblong, not wider than the thorax; the anterior margin of the clypeus entire; the mandibles strongly punctured, and ferruginous at their apex; the antennæ and legs pale rufo-testaceous. Thorax ovate. Abdomen ovate; the node of the peduncle subovate, its superior margin entire.

Hab. Australia.

128. *FORMICA NIGRICEPS.*

B.M.

Worker. Length $5\frac{1}{2}$ lines.—Pale ferruginous, with the head black, the face anteriorly and the mandibles ferruginous. The clypeus slightly produced, and widely emarginate, or rather, notched in front, its extreme anterior margin black; the antennæ ferruginous. Thorax rounded in front, and gradually narrowed and compressed towards the metathorax; the scale ovate, its margin rounded; the legs elongate. Abdomen ovate; the insect thinly sprinkled with erect ferruginous hairs.

Hab. Australia.

129. *FORMICA SUFFUSA.*

B.M.

Female. Length 7 lines.—Black: the head obscurely ferruginous, the face darkest, the antennæ black; the thorax with the sides with ferruginous stains above, the scutellum and two longitudinal stripes on the mesothorax, ferruginous; the legs ferruginous; wings fusco-hyaline, the nervures light brown, with a stain running along their course. Abdomen ovate, thinly clothed with pale golden pubescence.

Hab. Australia.

From the close resemblance between this species and *F. pili-ventris*, it is probable that this is the female of that insect.

130. *FORMICA TESTACEIPES*.

B.M.

Worker. Length 4 lines.—Shining black: the legs flavo-testaceous, the flagellum testaceous; the posterior angles of the head, two indistinct maculæ on the prothorax above, and also the disk of the metathorax, ferruginous. The head deeply emarginate behind, very smooth and shining; the anterior margin of the clypeus widely emarginate. Thorax smooth, anteriorly rounded, posteriorly compressed. Abdomen ovate; the scale of the peduncle ovate and notched above.

Hab. Australia (King George's Sound).

131. *FORMICA PILIVENTRIS*.

B.M.

Worker. Length $5\frac{1}{2}$ lines.—Very variable in colour: head obscurely black; thorax, legs and abdomen black, or with the head and the thorax obscurely red; sometimes black with only the legs red. Head large, much wider than the thorax, the mandibles with coarse longitudinal irregular striæ; the clypeus subcarinate; the head and thorax very delicately shagreened; the thorax rounded in front, much compressed behind, with the metathorax obliquely truncated. Abdomen obscurely cupreous and clothed with a short pale golden pubescence; the scale narrow, incrassate, narrowed to the upper margin, which is very faintly notched.

Hab. South Australia.

132. *FORMICA AUROCINCTA*.

B.M.

Worker. Length $4\frac{1}{2}$ lines.—Head, antennæ, thorax, legs and scale, ferruginous; abdomen black, the apical margins of the segments of a semi-transparent golden colour. Head wider than the thorax, subquadrate, the sides nearly parallel; mandibles black, stout, and furnished with five or six acute teeth; the clypeus blackish. Thorax rounded in front, narrowed posteriorly, and with a deep strangulation at the base of the metathorax; legs elongate. Abdomen ovate; the scale of the peduncle quadrate and incrassate, obtuse above.

Hab. Adelaide.

133. *FORMICA EPHIPIUM*.

Worker. Length 3 lines.—Black: the pro- and mesothorax ferruginous above. Head oblong-quadrate, slightly narrowed towards the mouth; the eyes placed high on the sides of the head; the antennæ and mandibles ferruginous; the scape more or less

fuscous; the clypeus with a central longitudinal carina; the mandibles serrated on their inner edge, with one or two stouter teeth at the apex. Thorax rounded in front and narrowed behind, the metathorax sometimes slightly ferruginous; legs elongate, the apical joints of the tarsi ferruginous. Abdomen small, ovate, covered with short pale yellow silky pubescence, interspersed with longer pale hairs; the head and thorax have also some scattered pale hairs; the scale of the peduncle subovate.

Hab. Adelaide. (Coll. F. Smith.)

134. *FORMICA NIGRO-ÆNEA.*

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Black, with a green tinge. Head large, wider than the thorax, emarginate behind; the clypeus subcarinate, its anterior margin slightly notched in the middle; mandibles obscurely ferruginous, punctured and strongly dentate within. Thorax short, rounded in front, much narrowed behind, terminating almost in a point at the verge of the truncation of the metathorax; the apical joints of the tarsi obscurely rufo-piceous. Abdomen ovate, thinly covered with fine silky pale yellow pubescence; the margins of the segments thinly fringed with pale glittering yellow hairs, a few hairs of the same colour sprinkled over the head and thorax; scale subovate, small, rounded above.

Hab. Melbourne.

135. *FORMICA PURPUREA.*

B.M.

Worker. Length 4 lines.—Head, antennæ, thorax and legs, bright red with a faint purple or blue tint; sometimes with the thorax posteriorly and the legs dusky, the purple tint being more vivid; abdomen bright violet, with sometimes a coppery tinge. In form resembling *F. rufa*, but with the head more narrowed anteriorly; the eyes smaller and placed more forward on the head; the antennæ rather longer and more slender; the thorax with a deep strangulation between the meso- and metathorax; the scale of the peduncle small, narrow, with its upper margin rounded and blunt. Abdomen ovate; the legs thinly covered with short pubescence.

Hab. Melbourne.

136. *FORMICA NIGRIVENTRIS.*

Formica nigriventris, Guér. *Voy. Coq. Zool.* ii. 203. *Atlas*, pl. 8. f. 4, 4 a, ♀.

Hab. Australia (Port Jackson).

137. FORMICA PROCIDUA.

Formica procidua, *Erichs. Wieg. Arch.* (1842) v. 230, 259.

Hab. Tasmania.

138. FORMICA CONSOBRINA.

B.M.

Formica consobrina, *Erichs. Wieg. Arch.* (1842) v. 258, 228 ♀.

Hab. Tasmania.

Erichson described the female only of this species; the worker differs considerably in form and slightly in colour. The head and the abdomen, except the basal segment, black, otherwise pale ferruginous; the flagellum is also ferruginous; the head large, wider than the thorax, the latter rounded in front and much compressed posteriorly.

Species of South America and the West Indian Islands.

SUBDIVISION 2.

Wings with one marginal and two submarginal cells, the discoidal cells obsolete. The scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose; ocelli usually wanting. (Sp. 139-176.)

No species belonging to the first subdivision have been received from South America.

139. FORMICA 6-GUTTATA.

B.M.

Formica sexguttata, *Fabr. Ent. Syst.* ii. 354 ♀; *Syst. Piez.* 401. 21.

Hab. Brazil (Santarem); Island of St. Cruz.

The insect which appears to be the *F. 6-guttata*, was captured by Mr. H. W. Bates at Santarem in Brazil; we have seen others from different parts of South America; on comparing specimens of both females and workers, we are unable to point out any specific distinctions between this species and the *F. maculata* of Fabricius, the latter being from Africa, and of which there is a series of specimens in the Collection of the British Museum.

140. FORMICA NANA.

Worker. Length $2\frac{1}{2}$ lines.—Black: the mandibles and antennæ ferruginous, the abdomen covered with golden pubescence. Head: the anterior margin of the clypeus and the sides of the head anteriorly, ferruginous; the clypeus with a central longitudinal carina, the head thinly covered with golden pubescence.

Thorax rounded in front and narrowed posteriorly; the apical joints of the tarsi ferruginous, covered thinly with golden pubescence. Abdomen subovate, covered with short golden pubescence, and thinly sprinkled with long golden-coloured hairs; the node of the peduncle incrassate, narrow, oblong-quadrate, with the margin above rounded.

Hab. Brazil. (Coll. D. Swainson, Esq.)

141. FORMICA OBSCURA.

Female. Length 3 lines.—Black: with the legs, thorax, on the sides and beneath, the emargination of the metathorax and the peduncle, ferruginous. Head closely and strongly punctured, thinly covered with pale pubescence; the extreme base and apex of the scape and also the base of the flagellum, the clypeus anteriorly and the mandibles, ferruginous; the antennæ and mandibles pubescent. Thorax strongly punctured, oblong-ovate, with the metathorax abruptly truncated; wings fusco-hyaline, the anterior pair with one marginal, three submarginal and one discoidal cell. Abdomen smooth, shining, and thinly covered with cinereous pubescence.

Hab. Brazil. (Coll. D. Swainson, Esq.)

It will no doubt be necessary hereafter to create a new genus for the reception of this remarkable species: we know only one other *Formica* which has the wings similarly veined, and that insect is from Australia.

142. FORMICA VINOSA.

Worker. Length 4 lines.—Head and thorax red, claret-coloured, the legs and abdomen of a more obscure tint. Head much wider than the thorax, the prothorax rounded at the sides, the meso- and metathorax much narrower; legs elongate and slender; the node of the peduncle incrassate, rounded, thick and blunt above.

Hab. Brazil. (Coll. D. Swainson, Esq.)

143. FORMICA LUTOSA.

B.M.

Worker. Length 2 lines.—Head and thorax of a reddish-yellow; the legs pale testaceous; abdomen of a dirty clay colour, with the margins of the segments more or less fuscous or black. Head large, much wider than the thorax, smooth and shining, or very obsoletely and delicately punctured, the anterior margin

of the clypeus entire. Thorax opake, and flattened above, compressed posteriorly. Abdomen ovate and shining; the scale of the peduncle subovate, pointed in the middle above.

Hab. Brazil (Villa Nova on the Amazons). (Coll. H. W. Bates.)

144. FORMICA DECORA.

Female. Length $3\frac{1}{4}$ lines.—Black: the abdomen with a cream-coloured spot on each side of the second and third segments at their base. Head a little wider than the thorax, oblong, subquadrate; eyes rather large, ovate; mandibles ferruginous; antennæ dark rufo-fuscous. Thorax narrow, elongate-ovate; wings wanting; the apex of the coxæ and trochanters pale testaceous yellow; the apical joints of the tarsi ferruginous. Abdomen elongate-ovate; the pale spots at the base of the second and third segments subtriangular, the apical margins of the segments thinly ciliated with glittering white hairs.

Hab. Brazil. (Coll. D. Swainson, Esq.)

145. FORMICA BLANDA.

B.M.

Worker. Length $2-2\frac{1}{4}$ lines.—The head anteriorly, the antennæ, thorax, legs, scale of the peduncle and base of the abdomen ferruginous, and thinly covered with a changeable silvery pile; the disk of the thorax and the head with a few scattered long pale hairs; the head wider than the thorax, the latter compressed posteriorly. Abdomen black, densely covered with pale golden pubescence, and sprinkled with long pale hairs; the scale of the peduncle incrassate, forming a small obtuse node.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

146. FORMICA RUFIPES.

B.M.

Formica rufipes, *Fabr. Syst. Ent.* 391. 4; *Ent. Syst.* ii. 350. 4;

Syst. Piez. 398. 7, and *Mus. Dom. Banks.* (♂ major).

Oliv. Encycl. Méth. vi. 491.

Latr. Hist. Nat. Fourm. 110.

St. Farg. Hym. i. 215. 20.

Hab. Brazil.

The typical specimen of this species in the Banksian Collection is the “*worker major*,” the small worker differs in size as well as form.

Worker major. Length $5\frac{1}{2}$ lines.—Black: opake and thinly sprinkled with ferruginous hairs; head cordate, twice the width of the thorax, the mandibles armed with six stout teeth; the

thorax and head of equal length, the former rounded in front and much compressed behind; the legs ferruginous, the tips of the joints and the three basal joints of the tarsi dusky; the scale of the peduncle ovate; the abdomen ovate, with the margins of the segments rufo-testaceous.

Worker minor. Length 3 lines.—Resembles the larger worker in colour, but has the head proportionately more elongate and narrow; the scale is narrower; the colour of the flagellum differs in being more or less ferruginous, sometimes entirely dusky.

The female is of the same colour as the workers; the head is very little wider than the thorax, the latter being elongate-ovate; the scale is emarginate above; the legs are shorter and rather stouter.

147. FORMICA ATRICEPS.

B.M.

Worker major. Length 5 lines.—Ochraceous, with the head black: in some examples the head and disk of the thorax are more or less fusco-ferruginous. Head very large, much wider than the thorax and deeply emarginate behind; the clypeus with a central longitudinal carina, its anterior margin broadly and deeply notched; the mandibles armed with five blunt teeth; the flagellum ferruginous. Thorax rounded in front, compressed and much narrowed behind. Abdomen ovate, narrower than the head; the scale ovate, rounded and somewhat narrowed above; the insect is sprinkled thinly with long erect ferruginous hairs.

Worker minor. Length 4 lines.—Of the same colour as the large worker, but with the head narrower and more elongate; the clypeus, mandibles and flagellum ferruginous; otherwise resembling the large worker.

Hab. Brazil (Para; Santarem; Rio).

A specimen from the collection of Mr. Swainson, probably the female of this species, is of the same colour as the worker: the thorax ovate, with a dark stain on the mesothorax in front and an elongate dark stripe on each side; the wings hyaline, the nervures yellow; the scale of the peduncle ovate, with a slight notch above; the knees, tarsi and apical segments of the abdomen fuscous.

148. FORMICA ARBOREA.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Opake-black: head large, wider than the thorax, slightly emarginate behind; the scape ferruginous at the base; the clypeus subcarinate, its anterior margin rounded; the mandibles armed with five acute teeth. Thorax

oblong, slightly narrowed behind; the two apical joints of the tarsi ferruginous; the head and thorax thinly sprinkled with pale yellow hairs. Abdomen ovate, clothed with short glittering yellow hairs.

Hab. Brazil.

There are several specimens of this species in the Museum Collection: a label attached to one bears the inscription, "The Leaf Ant.—Island of Morajo, Brazil."

149. *FORMICA EGREGIA*.

Worker. Length $6\frac{1}{4}$ lines.—Opake-black. Head widest in front, narrowed to the eyes, from which it is narrowed again abruptly backwards; antennæ elongate, nearly as long as the insect. Thorax elongate, narrow; legs elongate. Abdomen subovate, acuminate at the apex, thinly sprinkled with erect black hairs; node of the peduncle incrassate, narrow, its margin rounded above.

Hab. Brazil. (Coll. D. Swainson, Esq.)

150. *FORMICA ABRUPTA*.

Worker. Length 3 lines.—Light reddish-brown, thinly sprinkled over with erect pale hairs. Head subovate, emarginate behind; eyes round, placed midway on the sides of the head; the mandibles with a number of small black teeth on their inner margin. Thorax elongate, narrowed and compressed behind; the metathorax elevated, then abruptly truncated at the apex, the truncation slightly curved inwardly; the metathorax above with its lateral margins raised, forming a sort of subdentate process at the verge of the truncation; legs elongate and pubescent. Abdomen ovate; the scale of the peduncle incrassate, rounded in front to fit into the curved truncation, and hollowed behind to receive the base of the abdomen.

Hab. Brazil. (Coll. F. Smith.)

151. *FORMICA SOLITARIA*. Pl. XIII. figs. 4, 5.

Worker. Length $4\frac{1}{2}$ lines.—Opake-black, with eight or nine of the apical joints of the antennæ of a palish yellow; the mandibles and claws of the tarsi rufo-piceous. Head very large, wider than the thorax or abdomen; eyes occupying the whole of the sides of the head, very convex and prominent; the clypeus very large, much produced and truncate at the apex, with a central longitudinal carina, and covered with a thin grey pile; mandibles large, stout, shining, and having their inner margin finely serrated; the head emarginate behind; the ocelli promi-

nent on the vertex. Thorax elongate, narrow and compressed behind; the divisions of the thorax not very strongly marked; legs elongate and slender; the tibiæ with a few fine scattered spines or hairs. Abdomen ovate, with a few pale hairs at the apex; the scale of the petiole incrassate, and, viewed sideways, wedge-shaped.

Female. Length 5 lines.—Very closely resembles the worker, differing only in the form of the thorax, which is of a more ovate form, as in the majority of species, and in having wings, the neuration of which is the same as in *F. ligniperda*; the antennæ are elongate and slender, as in the worker.

Hab. Brazil (Ega).

This is a very remarkable insect; for, independent of the enormously developed eyes and produced clypeus, the palpi are elongated to half the length of the thorax, the maxillary are six, and the labial four-jointed. Mr. Bates says, "This curious solitary ant is never seen by more than one at a time, prowling about fallen leaves, &c. in the forest; I have never seen its *Formicarium*, and, from its solitary habits, have no clue to guide me in looking for it."

152. FORMICA MELANOCEPHALA.

Formica melanocephala, *Fabr. Ent. Syst.* ii. 353. 13.

Coq. Illustr. dec. 1. t. 6. f. 8.

Latr. Hist. Nat. Fourm. 269.

Lasius melanocephalus, *Fabr. Syst. Piez.* 417. 5.

Hab. Cayenne.

153. FORMICA PALLIPES.

Formica pallipes, *Fabr. Ent. Syst.* ii. 356. 28.

Latr. Hist. Nat. Fourm. 284.

Hab. Cayenne.

154. FORMICA SERICEIVENTRIS.

B.M.

Formica sericeiventris, *Guér. Voy. de la Coq. Zool.* ii. 205 ♂.

Formica cuneata, *Perty, Del. An. Art.* p. 134. t. 27. 1 ♂.

Hab. Rio Janeiro (Constancia); Columbia; Brazil; Mexico.

The descriptions of Guérin and Perty are of the large form of the worker; the female is from 8 to 10 lines long, and differs from the worker major in having the thorax oblong-ovate and broader in proportion to the head; in having ocelli which are small and placed rather forward, the anterior ocellus being in a

line with the vertex of the eyes; the wings are subhyaline, their nervures ferruginous; the scale of the peduncle is subquadrate, its upper margin notched in the middle; on each side of the notch it is rounded, and the lateral angles are produced into short spines. We have seen, from the collection of Mr. Swainson, an ant which we suppose to be the small form of the worker; it differs from the large form in having the head narrower, the antennæ and mandibles, as well as the clypeus anteriorly and the apical joints of the tarsi, ferruginous; in other respects it closely resembles the large worker.

155. *FORMICA SENEX*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Opake-black: abdomen slightly shining, with an obscure æneous tinge; the mandibles, antennæ and legs ferruginous; the anterior margin of the head slightly ferruginous. Head, of the same width as the thorax, slightly excavated behind; the anterior margin of the clypeus entire; the apex of the flagellum dusky. Thorax ovate, the metathorax truncate; wings subhyaline, the nervures pale testaceous; the apical joints of the tarsi dusky; the head and thorax are delicately shagreened, have a few scattered shallow punctures, and are sprinkled with erect white hairs. Abdomen ovate; the node of the peduncle ovate, margin entire; the abdomen is thinly covered with short white hairs, the margins of the segments ciliated with longer ones.

Worker. Length 3 lines.—In colour agreeing with the female. Head wider than the thorax. The thorax short, slightly narrowed posteriorly; the metathorax quadrate above and truncate behind; the scale as in the female, and the insect sprinkled with white hairs as in that sex.

Hab. Rio (Constancia). (Coll. Rev. H. Clark.)

156. *FORMICA AGRA*.

B.M.

Worker. Length $5\frac{1}{2}$ –6 lines.—Elongate, slender; very variable in colour, some specimens with the head black, and the thorax and abdomen dark brown, the legs being paler; other examples have the head fuscous, the thorax and abdomen being of a reddish-brown, the latter with the apex darker. Head widest, narrowing behind the eyes into a slender neck; the antennæ long and slender; the prothorax elongate, much narrowed anteriorly; the legs elongate and slender. Abdomen ovate; the scale of the peduncle incrassate and subconical; the apical margins of the segments of the abdomen pale testaceous.

Hab. Rio (Petropolis); Columbia. (Coll. Rev. H. Clark.)

This is one of those extraordinary forms which differ so widely from the generality of worker ants, that it might possibly constitute a new genus, or a distinct section; the male and female being unknown, it is retained in the genus *Formica*; in form it is very like *F. singularis*.

157. *FORMICA BIDENS*.

Formica bidens, Linn. *Syst. Nat.* i. 964. 13.

De Geer, Mém. Hist. Ins. iii. 600. t. 31. f. 1, 2.

Fabr. Spec. Ins. i. 492. 24; *Ent. Syst.* ii. 360. 42.

Oliv. Encycl. Méth. vi. 497. 36.

Atta bidens, *Fabr. Syst. Piez.* 422. 3.

Hab. Surinam.

158. *FORMICA STIGMA*.

Formica stigma, *Fabr. Syst. Piez.* 400. 18.

Hab. South America.

This is probably an *Odontomachus*; the black stigma is characteristic of all the species, and the exerted mandibles are equally constant in that genus.

159. *FORMICA CONSPICUA*.

B.M.

Female. Length 5-5½ lines.—Chestnut-red: the head about the same width as the thorax, slightly excavated behind; the clypeus subcarinate in the middle, its anterior margin slightly but widely emarginate; mandibles strong, punctured, and armed with four or five teeth. Thorax ovate; wings subhyaline, the nervures pale testaceous. Abdomen ovate; the apical margins of the segments of a darker hue; the scale of the peduncle wide, ovate, with the margin entire.

Hab. Jamaica.

160. *FORMICA SACCHARIVORA*.

Formica saccharivora, Linn. *Syst. Nat.* i. 963. 10.

Fabr. Syst. Ent. 392. 10; *Ent. Syst.* ii. 356. 24.

Oliv. Encycl. Méth. vi. 495. 21.

Latr. Hist. Nat. Fourm. 280.

Lasius saccharivora, *Fabr. Syst. Piez.* 417. 9.

Hab. West India Islands.

161. *FORMICA FEMORATA*.

Formica femorata, *Fabr. Syst. Piez.* 397. 3 ♀.

St. Farg. Hym. i. 213. 15.

Hab. South America.

162. FORMICA RAPAX.

Formica rapax, *Fabr. Syst. Piez.* 398. 9.

Hab. South America.

163. FORMICA FLAVESCENS.

Formica flavescens, *Fabr. Ent. Syst.* ii. 353. 12; *Syst. Piez.* 399. 15.

Latr. Hist. Nat. Fourm. iii. pl. III. f. 15 ♂.

St. Farg. Hym. i. 217. 23.

Hab. South America; Cayenne.

164. FORMICA HARPAX.

Formica harpax, *Fabr. Syst. Piez.* 401. 23.

Hab. South America.

In all probability a male of the genus *Ponera*.

165. FORMICA PERDITOR.

Formica perditor, *Fabr. Syst. Piez.* 402. 25.

Hab. South America.

166. FORMICA DESTRUCTOR.

Formica destructor, *Fabr. Syst. Piez.* 402. 24.

Hab. South America.

167. FORMICA RUFICEPS.

Formica ruficeps, *Fabr. Syst. Piez.* 404. 32.

Hab. South America.

168. FORMICA APICALIS.

Lasius emarginatus, *Fabr. Syst. Piez.* 416. 2 ♀.

Hab. South America.

169. FORMICA EXULANS.

Lasius exulans, *Fabr. Syst. Piez.* 416. 3 ♀.

Hab. South America.

170. FORMICA PICIPES.

B.M.

Formica picipes, *Oliv. Encycl. Méth.* vi. 501.

Latr. Hist. Nat. Fourm. 107. pl. iii. f. 16 ♂.

Hab. South America.

The insect which we suppose to be the female of this species, is from Santarem; it very closely resembles the *F. ligniperda*; the flagellum, legs, thorax beneath, pale ferruginous; in some specimens the metathorax is also pale, others have also the prothorax pale, and two pale longitudinal stripes on the disk of the thorax; the base of the abdomen is usually pale, as well as the basal segments beneath; the wings hyaline, with a yellow tinge at the anterior margin of the superior pair, the nervures pale ferruginous.

171. FORMICA BIMACULATA.

Worker. Length $2\frac{1}{4}$ lines.—Black and shining, with a transverse oblong white macula on each side of the second segment of the abdomen at its base, sometimes the maculae form a slightly interrupted fascia; some of the large workers have the head red. Head oblong, with the mandibles and antennae rufo-piceous; eyes rather large, prominent, and nearly circular. Thorax oblong, narrower than the head, compressed behind; the knees and the tarsi rufo-piceous. Abdomen ovate, with a few scattered glittering pale hairs; the scale of the peduncle incrassate, narrow, its margin above rounded; the legs and antennae pubescent.

The large worker only differs in being half a line larger, and in having the head red.

Hab. St. Vincent's. (Coll. F. Smith.)

172. FORMICA ALBIPENNIS.

Formica albipennis, *Fabr. Ent. Syst.* ii. 354. 19.

Latr. Hist. Nat. Fourm. 278.

Lasius albipennis, *Fabr. Syst. Piez.* 417.

Hab. Island of St. Cruz.

173. FORMICA OVATICEPS.

Formica ovaticeps, *Spin. Faun. Chili*, vi. 238. 3.

Hab. Chili.

174. FORMICA MOROSA.

B.M.

Worker. Length 3 lines.—Opake black: the flagellum ferruginous with the apex black. Head elongate, eyes ovate, placed rather high on the sides of the head; the mandibles ferruginous, the clypeus with a central longitudinal carina, the head rounded behind. Thorax not quite so wide as the head, much com-

pressed posteriorly; legs elongate, with the apical joints of the tarsi obscurely ferruginous. Abdomen elongate-ovate, the apical margins of the segments with a few glittering white hairs.

Hab. Chili.

175. *FORMICA DISTINGUENDA.*

Formica distinguenda, *Spin. Faun. Chili*, vi. 235. 1 ♂.

Hab. Chili.

176. *FORMICA CHILENSIS.*

Formica chilensis, *Spin. Faun. Chili*, vi. 237. 2 ♂.

Hab. Chili.

177. *FORMICA ATRIVENTRIS.*

Formica nigriventris, *Spin. Faun. Chili*, vi. 239. 4 (nec Guér.).

Hab. Chili.

Species of North America.

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal and one discoidal cell. The scale of the peduncle vertical and compressed. The ocelli present in the males and females, usually so in the workers.—Sp. 178-185.

The American species which belong to this division, as far as we have been able to ascertain, are all, except one species, common to Europe. Between the American and European specimens of the following species we can detect no specific distinctions: *Formica rufa* (Arctic America); *F. sanguinea* (Arctic America); *F. fusca* (Hudson's Bay); *F. umbrata*; *F. nigra* (Canada); *F. lateralis* (Hudson's Bay).

Of the second division, the *Formica pubescens* and *F. herculeana* of Europe are both widely distributed in America; the latter has been received from the United States, Nova Scotia, Canada, Hudson's Bay, and the Great Bear Lake in Arctic America. *Formica pubescens* has been received from the United States and also from Canada.

178. *FORMICA RUFA.*

Formica rufa, *Linn. Faun. Suec.* no. 1721.

Hab. Europe and North America.

179. FORMICA SANGUINEA. B.M.

Formica sanguinea, *Latr. Hist. Nat. Fourm.* 150.

Hab. Europe and North America.

180. FORMICA FUSCA. B.M.

Formica fusca, *Linn. Faun. Suec.* no. 1722.

Hab. Europe and North America.

181. FORMICA NIGRA. B.M.

Formica nigra, *Linn. Faun. Suec.* no. 1723.

Hab. Europe and North America.

182. FORMICA UMBRATA. B.M.

Formica umbrata, *Nyl. Addit. Mon. Form. Bor. Eur.* 1049.

Hab. Europe and North America.

183. FORMICA LATERALIS. B.M.

Formica lateralis, *Latr. Hist. Nat. Fourm.* 172.

Hab. Europe and North America.

184. FORMICA DISLOCATA.

Formica dislocata, *Say, Bost. Journ. Nat. Hist.* i. 288. 6.

Hab. North America (Indiana).

185. FORMICA INCISA. B.M.

Female. Length 4 lines.—Shining black : head elongate with the sides parallel, the vertex deeply notched ; the anterior margin of the face ferruginous, the mandibles armed with five or six sharp teeth, the flagellum nigro-piceous. Thorax oblong-ovate ; wings fusco-hyaline, the nervures black, the tarsi and knees ferruginous. Abdomen oblong-ovate, the margins of the segments narrowly testaceous ; the scale incrassate, compressed, with the margin entire.

Hab. Mexico.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells. the discoidal cells obsolete.—Sp. 186-197.

186. FORMICA HERCULANEA.

B.M.

Formica herculanea, Linn. *Faun. Suec.* 1720.*Formica castanea*, Latr. *Hist. Nat. Fourm.* 118. pl. III. f. 12. A. ♂, D. ♀, C. ♂.*St. Farg. Hym.* i. 215. 21.*Hab.* North America.

The *F. castanea* appears to be the highly coloured form of *F. herculanea*: specimens from the United States are frequently highly coloured, some having the basal segment of the abdomen red; those from Arctic America are usually very dark coloured.

187. FORMICA FERRUGINEA.

B.M.

Formica ferruginea, Fabr. *Ent. Syst. Suppl.* 279. 11; *Syst. Piez.* 399. 14.*Latr. Hist. Nat. Fourm.* 94.*Hab.* North America.

Extremely like the *F. ligniperda*, and apparently synonymous with the *F. castanea* of Latreille. A long series of the latter species exhibits a great variation in the colouring of different individuals: in some the first segment is red, in others it is merely red at the base; a few individuals have the head red; when this occurs, scarcely a trace of red is observable either on the metathorax or base of the abdomen. *F. ligniperda* has a close representative in most parts of the world: the *F. consobrina* of Erichson scarcely differs from the European species, but is found in Tasmania.

188. FORMICA PENNSYLVANICA.

Formica pennsylvanica, De Geer, *Hist. Ins.* iii. 603. 4. pl. 31. f. 9, 10.*Oliv. Encycl. Méth.* vi. 501. 52.*St. Farg. Hym.* i. 213. 14.*Formica pubescens* (var.), Latr. *Hist. Nat. Fourm.* 99.*Hab.* Pennsylvania.

189. FORMICA TRIANGULARIS.

Formica triangularis, Say, *Bost. Journ. Nat. Hist.* 288. 5 ♀ ♂.*Hab.* North America (Indiana).

190. FORMICA SUBSERICEA.

Formica subsericea, Say, *Bost. Journ. Nat. Hist.* i. 289. 7 ♀ ♂.*Hab.* North America (Indiana).

Tapinoma erratica, *Smith, Brit. Form.* 111. 1.

(*erraticum*) *Mayr. Form. Austr.* 101. 1; *Ungar. Ameis.* 14. 1.

Hab. Britain; France; Germany; Helsingfors; Hungary; Madeira.

2. *TAPINOMA ÆNESCENS.*

Formica ænescens, *Nyl. Addit. Alt. Adno. Mon. Form. Bor.* 37.

Hab. South Russia.

3. *TAPINOMA PYGMÆA.*

B.M.

Formica pygmæa, *Latr. Hist. Nat. Fourm.* 183.

St. Farg. Hym. i. 209. 10.

Nyl. Form. Fr. et d'Algér. 72. 33.

Tapinoma pygmæa, *Schenck, Beschr. Nass. Ameis.* 68.

(*pygmæum*) *Mayr. Form. Austr.* 103; *Ungar. Ameis.* 15. 2.

Hab. France; Germany; Hungary; Dalmatia; Italy; Madeira.

4. *TAPINOMA GRACILESCENS.*

B.M.

Formica gracilescens, *Nyl. Form. Fr. et d'Algér.* 73.

Hab. Botanical Gardens at Kew and Paris; Madeira. (Coll. T. V. Wollaston, Esq.)

5. *TAPINOMA NITENS.*

Tapinoma nitens, *Mayr. Form. Austr.* 105. 3; *Ungar. Ameis.* 15. 3.

Hab. Austria; Dalmatia; Hungary.

6. *TAPINOMA VIVIDULA.*

Formica vividula, *Nyl. Adno. Mon. Form. Bor.* 900. 4.

Hab. Finland.

7. *TAPINOMA GLABRATA.*

B.M.

Worker. Length $1\frac{1}{2}$ line.—Black, slightly shining: antennæ, mandibles and tarsi pale ferruginous; scale of the abdomen oblong and depressed; abdomen oblong-ovate. The clypeus obscurely testaceous, the mandibles and flagellum rufo-testaceous, the apex of the latter slightly fuscous; the head, prothorax and coxæ beneath, rufo-testaceous; the thorax inclining from the prothorax to the base of the metathorax, the latter convex above, the tarsi pale rufo-testaceous. Abdomen ovate, the scale inclined forwards in a line with the oblique truncation of the metathorax; the insect entirely destitute of pubescence.

Hab. Malacca.

8. *TAPINOMA SESSILIS*.

B.M.

Formica sessilis, Say, *Bost. Journ. Nat. Hist.* i. 287. 4 ♀ ♂.*Hab.* United States.Genus 3. *HYPOCLINEA*.*Formica*, pt., *Linn. Mantiss.* i. 541.*Tapinoma*, pt., *Schenck, Nass. Ameis.* 129 (1852).*Hypoclinea*, *Foerst. Hym. Stud. Form.* (1850).1. *HYPOCLINEA QUADRIPUNCTATA*.

B.M.

Formica quadripunctata, *Linn. Mantiss.* i. 541.*Fabr. Syst. Ent.* 392. 8; *Ent. Syst.* ii. 355. 22; *Syst. Piez.* 403. 28.*Oliv. Encycl. Méth.* vi. 494. 19.*Latr. Hist. Nat. Fourm.* 179. pl. vii. f. 37. A. ♀, B. ♀.*Losana, Form. Piem.* 322.*Nyl. Form. Fr. et d'Algér.* 73. 35.*Hypoclinea quadripunctata*, *Foerst. Hym. Stud. Form.**Mayr. Form. Austr.* 107. 2; *Ungar. Ameis.* p. 15. 1.*Tapinoma quadripunctata*, *Schenck, Besch. Nass. Ameis.* 129.*Hab.* France; Germany; Austria; Switzerland.2. *HYPOCLINEA FRAUENFELDI*.*Hypoclinea frauenfeldi*, *Mayr. Form. Austr.* 106. 1.*Hab.* Dalmatia.Genus 4. *POLYERGUS*. Pl. IV. figs. 1-9.*Formica*, pt., *Latr. Hist. Nat. Fourm.* p. 186 (1802).*Polyergus*, *Latr. Hist. Nat. Ins. et Crust.* xiii. 256 (1805).

The maxillary palpi 4-jointed, the labial palpi 2-jointed. Mandibles slender and curved, acute at the apex, not dentate within.

POLYERGUS RUFESCENS.

B.M.

Formica rufescens, *Latr. Hist. Nat. Fourm.* 186. pl. vii. f. 38 ♀.*Losana, Form. Piem.* 324.*Formica testacea*, *Fabr. Syst. Piez.* 400. 16 ♂ ?*Nyl. Form. Fr. et d'Algér.* p. 75 (note).*Polyergus rufescens*, *Latr. Hist. Nat. Ins. et Crust.* xiii. 256.*St. Farg. Hym.* i. 198. 1.*Guér. et Perch. Gen. des Ins.* t. 4. f. 1 ♂, 2 ♀.*Schenck, Besch. Nass. Ameis.* 70. 137.

Polyergus rufescens, Mayr. *Form. Austr.* 112. 1; *Ungar. Ameis.* p. 15. 1.

Nyl. Form. Fr. et d'Algér. 74. 1.

Hab. France; Switzerland; Germany; Austria.

This is the species whose interesting habits are detailed by Huber, and which is so well known as the Slave-making Ant. Like the *F. sanguinea*, it plunders the nests of various species, its communities being principally formed of the captives which it enslaves. It has not yet been found in this country, and appears to be rare even in the north of France; but in the south and also in Switzerland it does not appear to be uncommon.

Genus 5. POLYRHACHIS.

Formica, pt., *Fabr. Syst. Ent.* 394 (1775).

Maxillary palpi 6-jointed, elongate; labial palpi 4-jointed; mandibles stout, their inner edge denticulate. Ocelli obsolete in the workers. Thorax more or less armed with spines or hooks; scale of the peduncle incrassate, usually spinose, having two, three, or four spines. Wings with one marginal and two sub-marginal cells, the discoidal cells obsolete. Abdomen sub-globose.

We are indebted to Mr. T. C. Jerdon for the first account of the habits of this genus of Ants; speaking of the *F. nidificans*, he says: "This Ant makes a small nest about half an inch, or rather more, in diameter, of some papyraceous material, which it fixes on a leaf. I have opened two, each of which contained one female and eight or ten workers. It is very rare, and I have only seen it in Malabar." Since the publication of these remarks, a nest of one of the species has been received from Malacca; it was discovered by Mr. Wallace, and exactly agrees with Mr. Jerdon's description. Pl. IV. figs. 10, 11.

Species of India, the Eastern Archipelago, China, and Philippine Islands. Sp. 1-44.

1. POLYRHACHIS BIHAMATA. Pl. IV. fig. 19. B.M.

Formica bihamata, Drury, *Ins.* ii. pl. 38. f. 7, 8 &.

Fabr. Syst. Ent. 394. 21; *Ent. Syst.* ii. 361. 49; *Syst. Piez.* 411. 66.

Sulz. Gesch. Ins. t. 27. f. 19.

Oliv. Encycl. Méth. vi. 499.

Latr. Hist. Nat. Fourm. 127.

Polyrhachis bihamatus, Smith, *Proc. Linn. Soc.* ii. 59.

Hab. India; Sumatra; Borneo.

The specimens received from Borneo are much smaller and of

a paler colour than those from India; there is also a slight difference in the form of the curved spines which arm the node of the abdomen, being parallel to each other full half of their length, whilst in examples from India the spines diverge from their base.

2. POLYRHACHIS HASTATA. Pl. IV. figs. 15, 16. B.M.

Formica hastata, *Latr. Hist. Nat. Fourm.* 129. pl. iv. f. 23 ♂.

St. Farg. Hym. i. 221. 29.

Jerdon, Madr. Journ. Lit. & Sc. (1851) p. 126, & *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. India.

3. POLYRHACHIS SEXSPINOSA. B.M.

Formica sexspinosa, *Latr. Hist. Nat. Fourm.* 126. pl. iv. f. 21 ♀.

St. Farg. Hym. i. 219. 26.

Guérin, Voy. de la Coq. ii. 204. pl. 8. f. 3 ♂.

Jerdon, Madr. Journ. Lit. & Sc. (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. India; Philippine Islands.

4. POLYRHACHIS RELUCENS. B.M.

Formica relucens, *Latr. Hist. Nat. Fourm.* 131.

St. Farg. Hym. i. 220. 27.

Jerdon, Madr. Journ. Lit. & Sc. (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Polyrhachis relucens, *Smith, Proc. Linn. Soc.* ii. 59: 2.

Hab. India; Borneo.

5. POLYRHACHIS RASTELLATA.

Formica rastellata, *Latr. Hist. Nat. Fourm.* 130 ♀.

Hab. India.

6. POLYRHACHIS NIDIFICANS.

Formica nidificans, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 125;
Ann. & Mag. Nat. Hist. 2nd ser. xiii. 108. 45.

Hab. India (Malabar).

7. POLYRHACHIS SYLVICOLA.

Formica sylvicola, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 126;
Ann. & Mag. Nat. Hist. 2nd ser. xiii. 108. 46.

Hab. India (in jungles).

8. *POLYRHACHIS LACTEIPENNIS*. Pl. IV. fig. 40. B.M.

Female. Length $3\frac{1}{2}$ lines.—Opake-black, the wings milky-white. The clypeus emarginate in front, with a smooth shining line down the centre; a similar line runs upwards from the base of the clypeus, not quite extending to the anterior stemma. Thorax ovate, with the lateral angles of the prothorax acute; the metathorax armed at the lateral angles with a short stout acute tooth; the wings milky-white, the nervures pale testaceous, the stigma pale brown. Abdomen subglobose; the scale of the peduncle incrassate, subquadrate, with a long curved stout acute tooth at each superior lateral angle, the centre of the margin between the spines emarginate.

Hab. Northern India.

9. *POLYRHACHIS PILIVENTRIS*. Pl. IV. fig. 24. B.M.

Female. Length $3\frac{1}{4}$ lines.—Black: the head and thorax subrugose; abdomen smooth, shining, and covered with a fine cinereous pile. The mandibles triangular, with four or five sharp teeth on the inner edge which are rufo-piceous; the anterior margin of the clypeus rounded. Thorax oblong-ovate, the metathorax truncate; wings fulvo-hyaline, the nervures rufo-testaceous; the apical joints of the tarsi rufo-testaceous. The scale of the abdomen incrassate, subquadrate, with a stout spine at each of the superior angles, curving slightly inwards. Abdomen subglobose.

Hab. Singapore. (Coll. A. Wallace.)

10. *POLYRHACHIS DIVES*. Pl. IV. figs. 32, 33. B.M.

Worker. Length $2\frac{1}{2}$ lines.—Black: clothed with pale golden pubescence; the thorax with two short curved spines in front, and two of about the same length on the metathorax; the sides of the thorax nearly parallel, very slightly widest in front; the scale of the abdomen compressed, square anteriorly, and furnished with two long spines curved backwards. The pubescence on the head and thorax obscurely golden; the legs without spines or pubescence, the calcaria pale testaceous.

Hab. Singapore.

11. *POLYRHACHIS FLAVICORNIS*.

Female. Length 3 lines.—Black: the head and thorax subopaque; the abdomen shining and slightly fuscous. The flagellum, except the basal joint, reddish-yellow; the scape rufo-piceous. Thorax ovate; the legs rufo-piceous, the femora pale reddish-

yellow; wings subhyaline, nervures pale testaceous, stigma brown. Abdomen: the scale of the peduncle quadrate, armed with two short acute curved spines.

Worker. Length 2 lines.—Very like the female, but with the antennæ and legs of a deeper tint. The thorax with the sides flattened, the disk slightly convex, divided by two distinct sutures. The abdomen and scale as in the female.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

12. POLYRHACHIS HECTOR.

Worker. Length 4 lines.—Opake-black; delicately shagreened: the thorax armed with two long acute divergent spines in front, and two slightly divergent ones on the metathorax; the legs without spines or pubescence, the calcaria black; the disk of the thorax convex. Abdomen with an obscure ferruginous tinge; the scale of the petiole quadrate, with two long divergent spines above which curve backwards.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

13. POLYRHACHIS MODESTUS.

Female. Length 3 lines.—Black: the thorax ovate; the metathorax with two short blunt spines; the scale of the peduncle quadrate, armed above at the lateral angles with an acute spine which curves backwards. The head and thorax very delicately rugose; the flagellum rufo-piceous at the apex beneath; the wings flavo-hyaline, the nervures pale testaceous; the apical joints of the tarsi obscurely ferruginous. The abdomen globose, smooth and shining.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

14. POLYRHACHIS CHALYBEUS.

B.M.

Worker. Length 4 lines.—Black: the metathorax, legs and abdomen steel-blue; the head delicately rugulose; eyes ovate, lateral, placed high on the head; the antennæ inserted opposite the lower orbit of the eyes, each at the side of an elevated bent carina, the clypeus emarginate anteriorly, the mandibles large and stout, their apex denticulate. Thorax elongate, delicately transversely rugulose, with two stout acute spines in front, diverging outwards, and two shorter erect parallel ones on the metathorax; the femora and tibiæ compressed. Abdomen smooth and shining, the peduncle armed with two long stout diverging spines which are bent backwards.

Hab. Singapore. Malacca.

15. *POLYRHACHIS DEFENSUS*. Pl. IV. fig. 27.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Head and thorax black; abdomen opaque rusty-red. Head and thorax coarsely shagreened, the latter armed with two long stout spines in front and two similar ones at the angles of the metathorax. Abdomen globose; the scale of the peduncle with two long stout spines diverging and curving backwards.

Hab. Singapore. Java.

Some specimens from Java have the abdomen black.

16. *POLYRHACHIS LÆVIGATUS*.

Worker. Length $2\frac{1}{2}$ lines.—Black, smooth and shining: the antennæ with the flagellum thickened at the apex. Thorax: the anterior angles acute, the disk convex, the metathorax with two long, acute, divergent spines directed backwards; the coxæ and femora ferruginous, the anterior pairs obscure. Abdomen globose; the scale of the petiole with a long curved spine on each side, directed backwards to the curve of the abdomen.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

17. *POLYRHACHIS TEXTOR*. Pl. I. fig. 2.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Black: the head delicately rugulose; the eyes ovate, lateral, and placed high on the head; the front with two raised bent carinæ, at the sides of which the antennæ are inserted; the clypeus and the space between the antennæ rufo-piceous, the former with a slight longitudinal central carina; the mandibles obscurely rufo-piceous at their apex; the apical joint of the antennæ ferruginous. Thorax elongate, compressed at the sides and flattened above; the anterior portion longitudinally aciculate, the meso- and metathorax delicately rugulose; the prothorax with a short blunt tooth or spine on each side; the metathorax has also a minute tooth at the lateral superior angles; legs elongate, without spines or hairs, the tips of the claw-joints of the tarsi ferruginous. Abdomen smooth, highly polished; the scale of the peduncle with a single acute spine above, and a minute one on each side at its base.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

The nest of this species is figured in Pl. II. fig. 2.

18. *POLYRHACHIS CARBONARIUS*.

Worker. Length 2 lines.—Jet-black and shining: the head and thorax longitudinally aciculate above, the thorax most finely

so. The prothorax with a short acute spine at the lateral angles, the metathorax truncate, the truncation smooth and shining; the legs elongate, with acute spines or hairs, the calcaria pale testaceous; the anterior tibiae obscurely ferruginous in front. Abdomen ovate, smooth and shining; the scale of the peduncle incrassate, narrowed to its superior margin, which is wide, arched, and without spines.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

19. POLYRHACHIS AFFINIS.

B.M.

Worker. Length $2\frac{1}{4}$ lines.—Black: clothed with pale golden pubescence. Thorax: a very stout acute spine at each angle of the anterior margin of the thorax; the mesothorax convex above, the sides swollen; the metathorax with two divergent stout acute spines; the scale of the abdomen quadrate, with two long, rather slender spines above, which curve backwards over the abdomen; the legs without spines or pubescence, the calcaria pale testaceous.

Hab. Burmah.

This species is very like *P. dives* from Singapore, but differs principally in the form of the mesothorax.

20. POLYRHACHIS ABDOMINALIS.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Head, thorax and legs black; abdomen ferruginous. Head and thorax opaque, very delicately shagreened, the sides of the thorax and the legs with a slight rusty-red appearance; the anterior margin of the clypeus rounded; the eyes pale reddish-brown. Thorax armed in front with two long straight spines, directed obliquely forwards; the pro- and metathorax slightly convex, not margined laterally above; the metathorax with the lateral margins raised, longitudinally concave above, and terminating on each side in a long, straight, slightly divergent spine, the spines obscurely ferruginous at the apex. Abdomen subglobose, the scale of the peduncle incrassate, and with two long acute curved spines above.

Hab. Burmah.

21. POLYRHACHIS TIBIALIS.

B.M.

Worker. Length $2\frac{1}{4}$ lines.—Black: covered with a fine short slightly golden pubescent pile, the tibiae and flagellum ferruginous. Head: the basal joints of the flagellum fusco-ferruginous. Thorax: a short stout spine at each of the anterior angles, and a much longer one at the posterior angles; the thorax is convex

above. The scale of the peduncle incrassate, quadrate, and with a long acute spine curving backwards and outwardly over the abdomen on each side. Abdomen globose, and having a much finer and brighter pile than the head and thorax.

Hab. Burmah.

Very like *P. dives*; the thorax is however shorter, broader, and much more convex above; the spines on the metathorax are also much longer.

22. *POLYRHACHIS MUTATUS*. Pl. IV. figs. 12, 13. B.M.

Worker. Length $3\frac{1}{2}$ lines.—Opaque-black: abdomen ferruginous; the thorax armed with two long, stout, acute spines in front; the metathorax with two long straight spines directed backwards; the sides of the metathorax flattened, above, slightly concave or channeled; the peduncle armed with two long curved spines; the insect entirely destitute of hair; the legs without spines and dark rufo-piceous.

Hab. Burmah.

23. *POLYRHACHIS LÆVISSIMUS*. Pl. IV. fig. 42. B.M.

Worker. Length $2\frac{1}{4}$ lines.—Black, smooth and shining, with the coxæ, femora and tibiæ ferruginous. Head large, wider than the thorax, the latter widest in front, gradually narrowed to the apex of the metathorax; the anterior margin of the thorax rounded, the lateral angles acute, the disk very convex, the metathorax oblique. The scale of the peduncle incrassate, subquadrate, the superior margin notched in the middle, the lateral angles produced and acute. Abdomen globose.

Hab. Burmah.

24. *POLYRHACHIS FURCATUS*. Pl. IV. fig. 20. B.M.

Worker. Length $2\frac{1}{4}$ lines.—Head and thorax black; abdomen and legs rufo-testaceous. Head smooth, shining and impunctate: the anterior margin of the clypeus rounded; the mandibles triangular, their inner margin denticulate; antennæ with the scape black, the flagellum rufo-testaceous, the basal joints fuscous. Thorax coarsely rugose, armed on each side anteriorly with a long, stout, slightly curved, acute spine; the metathorax with two long, stout, bent, slightly divergent, acute spines. Abdomen smooth, shining and subglobose, the peduncle with a sort of elevated pedestal, from the summit of which are produced two elongate spines, hooked and acute at their apex.

Hab. Burmah.

25. POLYRHACHIS BICOLOR.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Head, thorax and scale of the abdomen black; antennæ, mandibles, palpi, legs and abdomen rufo-castaneous. Head covered with short cinereous pubescence; the frontal carinæ, at the sides of which the antennæ are inserted, much elevated; the eyes and ocelli reddish. Thorax ovate, and, as well as the scale of the peduncle, covered with short cinereous pubescence; the prothorax with a short acute spine on each side; there is also a similar spine on each side of the metathorax; the posterior tibiæ and tarsi fuscous. Abdomen globose, thinly covered with fine cinereous pile; the scale of the peduncle incrassate, quadrate, and with an acute spine at each of the superior angles, the spines straight and divergent.

Hab. Burmah.

26. POLYRHACHIS SUMATRENSIS. Pl. IV. fig. 43. B.M.

Female. Length $4\frac{1}{2}$ lines.—Head and thorax opaque-black; abdomen slightly shining and pubescent. Head narrowed behind the eyes, which are ovate and prominent; in front of the eyes oblong-quadrate, with the anterior margin of the clypeus rounded. Thorax oblong-ovate, with the metathorax truncated, the verge of the truncation margined; the prothorax with an acute spine on each side; wings fusco-hyaline, the nervures testaceous, the stigma and costal nervure brown; the legs slightly pubescent. Abdomen subglobose; the scale of the peduncle incrassate, rounded in front and slightly convex behind; viewed in front somewhat quadrate, but widest above, the superior margin with the lateral angles produced into short acute teeth, the middle of the margin subdentate; there is also a short acute spine on each side beneath the lateral angles.

Hab. Sumatra.

27. POLYRHACHIS PANDARUS. Pl. IV. fig. 45. B.M.

Worker. Length 4 lines.—Black: head and thorax coarsely shagreened; the palpi pale testaceous; head below the antennæ finely shagreened; the posterior margin sharply recurved. Thorax not flattened above; two long, stout, acute, divergent spines in front, and two similar ones behind; the scale quadrate, with two long, acute, divergent spines directed backwards; legs without spines or hairs; the anterior tibiæ with their calcaria pale testaceous, those on the intermediate and posterior legs black. Abdomen smooth, opaque-black.

Hab. Borneo (Sarawak).

Specimens from Singapore have the abdomen rusty-red.

28. POLYRHACHIS CUSPIDATUS.

Worker. Length 2 lines.—Black: the head subovate; the base of the scape, the apex of the flagellum and the tips of the mandibles ferruginous. Thorax slightly compressed, the prothorax with an elevation in the middle which terminates above in two divergent spines, there is also a similar elevation terminating in a spine on each side of the metathorax; the coxae femora and apical joints of the tarsi ferruginous. Abdomen ferruginous at the base, the scale of the peduncle quadrate, deeply notched above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

29. POLYRHACHIS EQUINUS.

Worker. Length 3 lines.—Black and shining: the thorax flattened above, the metathorax and the scale of the petiole bespinose, the legs pale ferruginous. Head shining and delicately rugulose; the palpi pale testaceous. Thorax with the lateral margins acutely edged, the sides of the thorax delicately striated, the prothorax above slightly concave and horseshoe-shaped, the metathorax also slightly concave, with the posterior angles acute and elevated, the metathorax smooth and shining behind. Abdomen globose, smooth and shining; the scale of the peduncle elevated, with two stout teeth above, the sides oblique; the scale is narrowest at its base.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

30. POLYRHACHIS VINDEX.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Black, slightly shining: the thorax flattened above, with two acute spines in front. The head and thorax covered with shining hoary pile, the former longitudinally striated; the apex of the flagellum beneath and the palpi pale rufo-testaceous. The thorax delicately striated longitudinally, divided by two distinct sutures, the lateral margins raised and acute, the posterior angles of the metathorax produced into acute spines; the tibiae and femora ferruginous, more or less fuscous at their apex. Abdomen globose, smooth and shining; the scale of the peduncle incrassate, narrowed to the superior margin, which is rounded, and terminates in a minute tooth laterally.

Hab. Borneo.

31. POLYRHACHIS RUFIPES. Pl. IV. fig. 28.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Black: the antennae, cheeks, lower part of the face, and the legs, ferruginous; the face

with three elevated carinæ in the middle, the antennæ inserted at the sides of the two outer ones; the head rugose, the thorax very coarsely so; thorax not flattened above, armed with two long, stout, acute spines in front and behind; scale of the abdomen incrassate, armed above with two long, bent, divergent spines. Abdomen smooth and shining, the entire insect sprinkled with a few long pale hairs.

Hab. Borneo (Sarawak).

32. POLYRHACHIS CASTANEIVENTRIS.

B.M.

Female. Length $3\frac{1}{4}$ lines.—Head and thorax black, and covered with fine grey pubescence; the antennæ and legs ferruginous; the mandibles and palpi ferruginous; the anterior coxæ black, the tarsi and posterior tibiæ fuscous; the thorax with two short acute spines in front, and two similar spines on the metathorax behind; the peduncle black, quadrate, armed with two divergent spines above.

Var. Thorax castaneous, with a downy cinereous pubescence.

Hab. Borneo (Sarawak).

33. POLYRHACHIS VILLIPES. Pl. IV. figs. 37, 38.

B.M.

Worker. Length $3\frac{1}{2}$ –4 lines.—Black: the head and thorax longitudinally delicately aciculate; eyes ovate, very prominent, situated high on the sides of the head, the head narrowed posteriorly, the carinæ much elevated on the face, the palpi pale rufo-testaceous. Thorax armed in front with two long, acute, divergent spines, not armed posteriorly; the superior surface flattened, distinctly divided by two transverse sutures, and having a curved decline to the verge of the truncation of the metathorax; legs elongate, thinly covered with erect pubescence. Abdomen smooth and shining, sprinkled with erect black hairs; the peduncle, viewed in front, subquadrate, narrowed to the base, the superior lateral angles with long, stout, diverging, acute spines; there is also a minute spine at the side, a little beneath the elongate ones.

Hab. Borneo (Sarawak).

34. POLYRHACHIS NITIDUS.

B.M.

Female. Length 4 lines.—Jet-black: smooth and shining; thorax ovate, the metathorax with two long acute spines; the peduncle quadrate, armed with two, long, curved, acute spines; the thorax rounded anteriorly; the truncation of the metathorax delicately transversely rugulose and shining; the anterior tibiæ rufo-piceous in front; wings subhyaline, faintly tinted with yel-

low; the nervures ferruginous, the stigma brown. Abdomen subglobose, very smooth and shining.

Hab. Borneo (Sarawak).

35. *POLYRHACHIS RUFICORNIS.*

Female. Length 4 lines.—Black: the antennæ, mandibles, legs, and base of the abdomen, ferruginous. Thorax elongate-ovate; wings subhyaline and iridescent, the nervures testaceous; the coxæ black. Abdomen globose, the scale of the peduncle with two stout, divergent spines above, which curve slightly backwards.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

36. *POLYRHACHIS CONSTRUCTOR.* Pl. IV. fig. 23.

Female. Length $4\frac{1}{2}$ lines.—Black: head and thorax opaque; legs and abdomen shining. Thorax ovate, the prothorax slightly produced laterally, forming a small tubercle, the metathorax with two short, stout, erect teeth, or spines; wings subhyaline, the nervures rufo-testaceous. Abdomen: the node of the peduncle incrassate, with three short, stout, acute spines. Abdomen subglobose.

Hab. Sarawak. (Coll. W. W. Saunders, Esq.)

37. *POLYRHACHIS INERMIS.* Pl. IV. figs. 25, 26. B.M.

Worker. Length $2\frac{1}{4}$ lines.—Black: covered with a shining grey pile; the thorax armed at the angles of the anterior margin with short acute spines; the scale of the abdomen with its superior margin much wider than the basal one, and rounded, not spined. The thorax flattened above, its lateral margins acute, divided by two distinctly marked sutures; the head longitudinally striated, the abdomen subglobose.

Hab. Celebes.

38. *POLYRHACHIS RIXOSUS.* B.M.

Female. Length 4 lines.—Black: head and thorax longitudinally striated; abdomen shining and delicately rugose; the thorax armed in front with two stout spines; the scale of the peduncle with five spines on its superior margin, the three central spines short and acute, the lateral pair rather longer and also acute. The head and thorax slightly pubescent; the extreme apex of the flagellum pale ferruginous; the metathorax truncated, slightly concave; legs slightly pubescent, the claws pale

rufo-testaceous. Abdomen subglobose and delicately rugose, the extreme apex rufo-testaceous.

Hab. Celebes.

39. *POLYRHACHIS VIGILANS*. Pl. IV. fig. 39. B.M.

Female. Length $4\frac{1}{2}$ lines.—Black : densely clothed with fine, short, silky, golden pubescence. Thorax : a short acute spine at each of the anterior angles ; the posterior margin of the prothorax curved, the metathorax truncate ; the legs with a thin silky pile, and sprinkled with long pale hairs. Abdomen subglobose ; the scale incrassate, broad at the base and acute at its superior margin, which is widely emarginate above, the angles of the emargination acute, and a short tooth at the sides.

Hab. Hong Kong.

40. *POLYRHACHIS TYRANNICUS*. Pl. IV. fig. 29. B.M.

Worker. Length 3 lines.—Black : covered with a thin, silky, pale golden pile ; the thorax flattened above and gradually arched to the apex of the metathorax, the lateral margins sharp and slightly recurved, the anterior angles armed with a stout acute tooth ; the scale of the abdomen incrassate at the base, narrowed to the superior margin, which is transverse, and has an acute spine at each lateral angle, and a shorter acute one beneath at the side. Abdomen subglobose, the insect sprinkled with a few erect, pale hairs.

Hab. China.

This species may probably be the worker of *P. vigilans*, but the armature of the scale is too widely different to justify their being united.

41. *POLYRHACHIS PHILIPPINENSIS*. Pl. IV. fig. 34. B.M.

Worker. Length 5 lines.—Head and thorax opaque-black ; abdomen shining black. Antennæ elongate, as long as the body ; head narrowed behind, eyes ovate and prominent, head before the eyes oblong-quadrate, with the clypeus rounded in front ; palpi elongate, pale ferruginous. Thorax elongate ; the pro-, meso- and metathorax divided by distinct sutures ; the thorax flat above, the margins slightly raised, forming a sharp edge ; the prothorax armed with two long, acute, stout, and slightly divergent spines ; legs elongate, almost destitute of pubescence, having only a few short hairs on the tibiæ and tarsi. Abdomen nearly globular ; scale of the peduncle incrassate ; viewed in

gins acute; the prothorax with a stout acute spine on each side in front, the divisions of the thorax strongly marked; the posterior angles of the metathorax slightly produced, not spined. The scale of the peduncle incrassate, subquadrate, with a long, stout spine at each of its superior angles, and a short acute one outside beneath them; abdomen globose.

Hab. Port Natal.

48. *POLYRHACHIS MILITARIS*. Pl. III. fig. 5, & Pl. IV. fig. 36. B.M.

Formica militaris, *Fabr. Spec. Ins.* i. 493. 30 ♀; *Mant. Ins.* i. 310. 37; *Ent. Syst.* ii. 362. 50; *Syst. Piez.* 414. 73.

Oliv. Encycl. Méth. vi. 499. 46.

Latr. Hist. Nat. Fourm. 124. pl. iv. f. 22 ♀.

Hab. Africa (Guinea; Sierra Leone).

The type-specimen of this species is in the Banksian Collection; the insect is covered with a fine cinereous pile, the head and thorax are finely longitudinally rugulose, the spines on the prothorax are short, stout, and acute; the metathorax quadrate above, with the posterior and lateral margins carinated, the abdomen sprinkled with erect, pale hairs.

The male has the head and thorax coarsely rugose, the thorax more elongate than in the female, with two short acute spines in front and two longer ones on the metathorax; the petiole has only two spines, which are curved backwards over the base of the abdomen; the latter is elongate-ovate, and covered with fine, silky, cinereous pile.

The male is in the Collection of W. W. Saunders, Esq.

49. *POLYRHACHIS LABORIOSUS*. Pl. IV. figs. 21, 22. B.M.

Worker. Length 4 lines.—Black: the abdomen covered with fine, short, golden pubescence. The anterior margin of the clypeus rounded, and having a slight carina down the middle; the mandibles short, triangular, and armed with five acute, ferruginous teeth; the palpi dark fusco-ferruginous; the head is finely longitudinally rugose, and thinly covered with cinereous pubescence. Thorax armed in front with two long acute spines, above, slightly concave, with the lateral margins forming a sharp raised carina, the disk with a little golden pubescence, which is frequently obliterated, the sides with a thin cinereous pubescence. Abdomen subglobose, the node of the peduncle with two long, erect, hooked spines directed backwards.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

50. POLYRHACHIS CONSIMILIS. Pl. IV. figs. 30, 31. B.M.

Worker. Length 4 lines.—Black: the abdomen covered with golden pubescence. Head and thorax opaque, finely rugose. Thorax armed anteriorly with two stout, bent, acute spines; the metathorax with two long, slender, acute spines directed backwards; the divisions of the parts of the thorax strongly marked, the disk slightly convex, the lateral margins forming sharp carinæ. Abdomen subglobose, the scale of the peduncle incrassate, somewhat oblong, with two long, curved, acute spines directed backwards.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

This species resembles the *P. Ammon*, but differs in having longer spines in front of the thorax, and also in having the spines on the metathorax much longer and more slender.

51. POLYRHACHIS ARGENTATUS.

Formica argentata, *Fabr. Syst. Piez.* 413. 72.

Hab. New Caledonia; Africa.

Species of Australia and Tasmania. (Sp. 52-55.)

52. POLYRHACHIS AMMON. B.M.

Formica Ammon, *Fabr. Syst. Ent.* 394. 20 ♂; & *Cab. Mus. Dom. Banks.*; *Ent. Syst.* ii. 361. 48; *Syst. Piez.* 411. 65.

Oliv. Encycl. Méth. vi. 499. 44.

St. Farg. Hym. i. 221. 30.

Guérin, Voy. de la Coq. Zool. ii. 204.

Jerdon, Madr. Journ. Lit. & Sci. (1851); *Ann. & Mag. Nat.*

Hist. 2nd ser. xiii. 109.

Hab. Australia.

53. POLYRHACHIS LATREILLII.

Formica Ammon, *Latr. Hist. Nat. Fourm.* 132 (nec *Fabr.*).

Formica Latreillii, *Guér. Voy. Coq. Zool.* ii. 205.

Hab. Australia.

54. POLYRHACHIS FEMORATUS. Pl. IV. fig. 46. B.M.

Worker. Length 4 lines.—Black: head and thorax opaque, abdomen smooth and shining; the clypeus with a slight central carina; the extreme apex of the flagellum pale rufo-testaceous, the palpi ferruginous. Thorax compressed, slightly convex above, the lateral margins acute, distinctly divided into three portions by two transverse sutures, the anterior one curved; the

metathorax truncate, the truncation smooth and shining, the lateral angles of its verge recurved; the coxæ and femora ferruginous, the apex of the latter black. Abdomen: the scale subquadrate, and armed with four acute angular spines on its superior margin.

Hab. Australia (Melbourne).

55. POLYRHACHIS HEXACANTHUS.

Formica hexacantha, *Erichs. Wiegmann Archiv* (1842), 260. 231 ♂.

Hab. Tasmania.

Species of Brazil. (Sp. 56–58.)

56. POLYRHACHIS BISPINOSUS. Pl. XIII. fig. 1. B.M.

Formica bispinosa, *Oliv. Encycl. Méth.* vi. 502. 60.

Latr. Hist. Nat. Fourm. 133. pl. 4. f. 20 ♂.

Formica fungosa, *Fabr. Ent. Syst. Suppl.* 281. 42; *Syst. Piez.* 410. 60.

Hab. Cayenne; Brazil (Santarem).

57. POLYRHACHIS SPINICOLLIS.

Formica spinicolle, *Latr. Voy. Humb. et Bonpl. Zool.* ii. 99. pl. 38. f. 6, 7 & 8–10.

Hab. Brazil (Rio Negro).

58. POLYRHACHIS RUGOSUS.

B.M.

Worker. Length $5\frac{1}{4}$ lines.—Black: the abdomen densely clothed with pale golden silky pubescence. Head elongate and coarsely rugose; eyes very prominent, placed backwards on the sides of the head; the head much narrowed behind the eyes, before the eyes it is slightly widened to the angles of the anterior margin, which is rounded; the mandibles large and triangular, finely denticulate on their inner margin; antennæ elongate and slender, the scape with a number of erect, long hairs. Thorax elongate, slender, and coarsely rugose; the prothorax narrowed anteriorly into a kind of neck, the mesothorax narrower than the pro- or metathorax, the latter elevated and furnished with two long, stout spines; legs elongate and having a number of erect, long hairs. Abdomen ovate; the node of the peduncle elongated, incrassate and slightly bent, widest at the base.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

Genus 6. DOLICHODERUS.

Formica, pt., *Fabr. Syst. Ent.* 394 (1804).

Dolichoderus, *Lund. Ann. des Sc. Nat.* xxiii. (1831).

1. DOLICHODERUS ATTELABOIDES. Pl. V. figs. 1, 2, 3. B.M.

Formica attelaboides, *Fabr. Syst. Ent.* 394. 19 ♂ ; *Ent. Syst.* ii. 360. 45 ; *Syst. Piez.* 410. 62.

Oliv. Encycl. Méth. vi. 498. 40.

Latr. Hist. Nat. Fourm. 288.

St. Farg. Hym. i. 222. 31.

Dolichoderus attelaboides, *Lund. Ann. des Sc. Nat.* xxiii. 130.

Hab. Brazil (Para ; Santarem ; Tejuca ; Rio Janeiro).

All the sexes of this species have been received from Mr. Bates : figures are given of the male and female ; the latter only differs from the worker in having the thorax more robust, and in being winged : the male is four lines and a half long, black, with the abdomen and legs smooth and shining, the head and thorax rugose as in the worker ; the tarsi, articulations of the legs and apex of the antennæ testaceous ; the head is triangular, prolonged behind into a neck, with the eyes larger and more prominent than in the other sexes ; the abdomen is elongate-ovate.

2. DOLICHODERUS DECOLLATUS.

B.M.

Female. Length 6 lines.—Head, antennæ, thorax, legs, and scale of the petiole, ferruginous ; abdomen ovate, black, covered with a fine silky pile, the fourth and following segments ferruginous. Head elongate-ovate, coarsely rugose ; the mandibles smooth and shining, with a few scattered punctures, the head not prolonged into a neck. Thorax rugose, the metathorax with two stout curved spines ; the wings flavo-hyaline, the nervures pale rufo-testaceous.

Hab. Demerara. (Coll. F. Smith.)

This species is distinguished from *attelaboides* by not having the head prolonged into a neck ; it is also a broader and more robust insect ; the metathorax is rugose above, not transversely striated as in the other species.

The worker of this species is in the British Museum ; it is also from Demerara ; it differs from the worker of *attelaboides* in not having the head prolonged into a neck ; it is, however, proportionately larger than in that species.

Family II. PONERIDÆ.

Ponerites, *St. Farg. Hym.* i. 185 (1836).

Poneridæ, *Smith, Cat. Brit. Hym.* p. 6 (1851).

The peduncle of the abdomen with a single node, the first segment more or less constricted. The females and workers armed with a sting. The pupæ enclosed in cocoons.

Genus 1. ODONTOMACHUS.

Formica, pt., *Linn. Syst. Nat.* i. 965 (1766).

Odontomachus, *Latr. Gen. Crust. et Ins.* iv. 128 (1804).

Species of Brazil. (Sp. 1-7.)

1. ODONTOMACHUS HÆMATODES. Pl. V. figs. 4-7. B.M.

Formica hematoda, *Linn. Syst. Nat.* i. 965. 17 ♂.

Fabr. Syst. Ent. 395. 26; *Ent. Syst.* ii. 364. 29.

Oliv. Encycl. Méth. vi. 502. 58.

Latr. Hist. Nat. Fourm. 192.

Formica maxillosa, *De Geer, Ins.* iii. 601. pl. 31. f. 3, 4, 5 ♀.

Oliv. Encycl. Méth. vi. 502. 59.

Formica unispinosa, *Fabr. Ent. Syst.* ii. 359. 39.

Myrmecia hæmatoda, *Fabr. Syst. Piez.* 425. 7.

Formica unispinosa, *Latr. Hist. Nat. Fourm.* 193 ♂.

Myrmecia unispinosa, *Fabr. Syst. Piez.* 423. 1.

Odontomachus hæmatodes, *Latr. Gen. Crust. et Ins.* iv. 128 ♂.

Odontomachus unispinosa, *Latr. Gen. Crust. et Ins.* iv. 128 ♂.

Hab. Brazil (Para, Villa Nova); Cayenne.

The sexes of this species have been received from Mr. H. W. Bates, who took them from the same nest; in a note on the species he says:—"Colonies of this insect are found beneath fallen leaves in the shade of trees; their communities consist of a few individuals, about thirty or forty, which scamper off with their pupæ on being disturbed." They vary in colour, some of the workers having the head, thorax and legs pale testaceous.

The male is about 3 lines in length, entirely of a pale ochraceous colour, the antennæ and legs being yellowish-white; the antennæ are nearly as long as the body, the wings clear hyaline, the nervures colourless, the stigma dark brown; the node of the abdomen is conical and blunt at the apex, the abdomen elongate-ovate, with the margins of the segments slightly depressed.

Mr. Bates says, "On turning over a rotten branch of a tree lying on the ground, I found a small colony of this species;

immediately on finding themselves disturbed, each seized a Termes-worker, of which there was a small colony in the same place, and walked off. I noticed that they took up the Termes very carefully, just in the same way as ants take up their own pupæ and larvæ when disturbed."

2. ODONTOMACHUS CHELIFERUS.

Formica chelifera, Latr. *Hist. Nat. Fourm.* 188 ♂. pl. 8. f. 51.

Ponera chelifera, Latr. *Gen. Crust. et Ins.* iv. 128.

St. Farg. & Serv. Encycl. Méth. x. 184. 1.

Hab. South America.

We are acquainted with two species of this genus, *O. affinis* and *O. maxillaris*, both of which agree in every respect with Latreille's *chelifera*, with the exception of the sculpture of the abdomen. Latreille describes the abdomen as having the skin (or surface) very finely striated; we are acquainted with twelve species of the genus, none of which have the slightest trace of striation on the abdomen. Is it not possible that there is an error in the description of *chelifera*, and that either *affinis* or *maxillaris* are identical with it?

3. ODONTOMACHUS AFFINIS.

B.M.

Odontomachus affinis, Guér. *Icon. Règn. Anim.* iii. 426 ♂.

Hab. Brazil; Rio (Petropolis). (Coll. Rev. Hamlet Clark.)

4. ODONTOMACHUS MAXILLARIS. Pl. V. figs. 12-14. B.M.

Female. Length 7 lines.—Pale reddish-brown, irregularly stained with darker shades on the thorax; the head very smooth and shining, the mandibles two-thirds of the length of the head, abruptly curved at their apex and armed with three teeth, the inner one shortest; the inner edge of the mandibles serrated; on each side of the face a deep smooth longitudinal excavation, commencing at the base of the mandibles and terminating opposite the anterior ocellus; the space between the excavations longitudinally striated, the striation terminating at the posterior ocelli, from which a deep channel runs upwards to the extremity of the vertex; the antennæ as long as the head and thorax, slender and filiform. Thorax elongate-ovate; the pro- and mesothorax transversely striated, the mesothorax longitudinally so; the coxæ and base of the femora pale. The scale smooth and spined at the apex; the abdomen smooth and shining, with the base and the apical margins of the segments dark brown, the whole sprinkled with a few long pale hairs.

Worker. Length 7 lines.—In colour resembling the female;

the head similarly sculptured; the prothorax forming a kind of neck, the meso- and metathorax elongate and straight, the sides being nearly parallel, the whole transversely striated; the legs paler than the thorax. The peduncle produced above into a sharp elongate spine, its base beneath also armed with a shorter spine; the abdomen as in the other sex.

Hab. Brazil (Ega and Villa Nova). (Coll. H. W. Bates.)

This species very closely resembles the *O. affinis* of Guérin, but the abdomen is black in that species, and no mention is made of the spine beneath the peduncle of the abdomen; in Guérin's species the mandibles are feebly denticulate, in this they are strongly so.

5. *ODONTOMACHUS QUADRISPINOSUS*. Pl.V.figs.15-17. B.M.

Worker. Length $4\frac{1}{2}$ lines.—Reddish-brown, with the coxae and femora pale testaceous. The head of the same form and similarly sculptured to *O. maxillaris*; the mandibles two-thirds of the length of the head, abruptly bent inwards at their apex, which is armed with two long acute teeth, which have a third short tooth in the middle of their fork. The prothorax forming a neck; the meso- and metathorax elongate and narrow, transversely roughened, not regularly striated; the metathorax with two short spines on the verge of its truncation. The peduncle of the abdomen notched at its apex, forming two short spines. The abdomen with its apex pale testaceous, and having a few scattered long pale hairs.

Hab. Brazil.

6. *ODONTOMACHUS HIRSUTIUSCULUS*.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Black: thinly sprinkled with griseous hairs; the mandibles, antennae and legs pale ferruginous, the mandibles about half the length of the head, shining and finely denticulate on their inner edge; the head longer than broad, very finely and closely striated; the deep lateral channels on the face opposite the eyes smooth and shining, the head slightly narrowed posteriorly, the hinder margin emarginate; from the centre of the emargination an impressed line runs forwards and unites with the anterior channels: on each side the striation is oblique. Thorax: the prothorax with longitudinal striae, which are straight in the centre and curved at the sides; the striation on the meso- and metathorax transverse; the scale of the peduncle conical, and terminating in a single spine at the summit; the abdomen elongate-ovate, smooth and shining.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

This species very closely resembles the *O. hæmatodes*, but independent of its smaller size, the head is of a different form; still it may possibly be a small form of that species, if such exist in the colonies of the insects of this genus, a circumstance which does not appear to have been observed.

7. ODONTOMACHUS? GHILIANII.

Odontomachus Ghilianii, *Spin. Mem. Accad. Torino*, xiii. 71 (1853).

Hab. Brazil (Para).

This is probably a species of *Formica*, notwithstanding its general resemblance to a species of *Odontomachus*; the abdomen and scale of the peduncle are described as being the same as in *Formica*; and no mention being made of the sting, which in *Odontomachus* is always more or less exerted, renders it highly probable that this is only one of the more remarkable and slender forms of a species of true *Formica*.

Species of Cuba.

8. ODONTOMACHUS INSULARIS.

Odontomachus insularis, *Guér. Icon. Règ. Anim.* iii. 423 ♂ ♀.

Hab. Cuba.

Species of Singapore, Ceylon, Ceram, and the Philippine Islands. (Sp. 9-13.)

9. ODONTOMACHUS RIXOSUS.

B.M.

Worker. Length $4\frac{1}{2}$ lines.—Head, antennæ and mandibles reddish-brown; the sulcations on the face obliquely striated behind, and smooth and shining towards the mouth; the elevation between the sulcations longitudinally striated, the hinder portion of the head smooth and shining, the central longitudinal impression not very profound. The thorax transversely striated, the prothorax circularly and delicately so, of an obscure reddish-brown; the coxæ and femora pale testaceous; the tibiæ and tarsi pale ferruginous. Abdomen reddish-brown, very smooth and shining, the base and apex paler; the node conical, terminating above in an acute point, and produced at the base beneath into an obtuse tooth.

Hab. Singapore.

10. ODONTOMACHUS RUGOSUS.

Worker. Length 3 lines.—Rufo-fuscous: the head, thorax, and nodes of the peduncle coarsely, deeply and longitudinally

striated; the mandibles and scape pale ferruginous, the flagellum pale testaceous; the mandibles very slender at their base, their inner edge finely serrated, their apex armed with two blunt teeth, which are abruptly curved at right angles with the jaws; the head rather longer than broad, deeply emarginate behind, the sides smooth and shining; the legs ferruginous. Abdomen smooth and shining dark rufo-piceous, with the apex pale.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

11. *ODONTOMACHUS SIMILLIMUS*. Pl. V. figs. 8, 9. B.M.

Female. Length $4\frac{1}{2}$ lines.—Resembling *O. hamatodes*, with the following differences: the mandibles more distinctly serrated, the sulcations on the sides of the face anteriorly, not so deeply impressed, or so smooth and shining, they also terminate before reaching the ocelli; the line running from the ocelli to the posterior margin of the vertex is not so deeply impressed; the most striking difference is to be found in the neururation of the wings; the discoidal cell is of a somewhat different form, and the externo-medial nervure is straight, and unites with the transverso-medial nervure at the basal angle of the discoidal cell; in other respects it scarcely differs from *O. hamatodes*.

Hab. Fidjee Islands; Ceylon.

The difference pointed out in the neururation of the wings would appear to indicate a generic distinction; but an examination of a number of winged females shows a frequent approach to the neururation of the present species, and in specimens of the male of *hamatodes*, taken with the female from the same nest, by Mr. Bates, the neururation is found to be identical with that of *O. simillimus*; in the British Museum are two specimens from Ceylon which appear to be identical with the present species.

12. *ODONTOMACHUS SÆVISSIMUS*. Pl. V. figs. 10, 11. B.M.

Worker. Length 7 lines.—Ferruginous: the mandibles of a deeper tint than the head, the mouth blackish; the deep excavations on the face as in the *O. infandus*, but the head behind smooth and shining; the central longitudinal channel very deeply impressed; the mandibles serrated and toothed at the apex. Thorax elongate, transversely striated, the prothorax very delicately so; the abdominal peduncle terminating in a long bent acute spine, and having a short blunt tooth at its base beneath; the legs pale ferruginous, with the tarsi dusky. Abdomen fusco-ferruginous, very smooth and shining.

Hab. Ceram. (Coll. Madame Ida Pfeiffer.)

13. ODONTOMACHUS INFANDUS.

B.M.

Worker. Length 6 lines.—The head and thorax ferruginous, with a fine silky grey pile; the antennæ ferruginous; the legs pale testaceous, with the tarsi dusky. The mandibles serrated on their inner edge, the teeth increasing in size towards the apex of the jaws, which are suddenly bent at their extremity and armed with three teeth, the inner one shortest; the deep sulcations on the face between the eyes, smooth and shining, the hinder portion finely and obliquely striated; the head, behind the sulcation, striated on each side obliquely from the centre. The prothorax with fine curved longitudinal striæ, that on the meso- and metathorax transverse. The node of the abdomen terminating above in a long, slightly curved, acute spine, the base of the node with a blunt tooth beneath.

Hab. Philippine Islands. (Coll. H. Cuming.)

Notwithstanding the great similarity of all the species of this genus, and particularly between this and the *O. maxillaris*, the great difference in the serration of the mandibles will at once distinguish them.

Species of Australia.

14. ODONTOMACHUS RUFICEPS.

B.M.

Worker. Length $5\frac{1}{2}$ lines.—Head red; the thorax, legs and abdomen dark rufo-fuscous. The mandibles distinctly serrated on their inner edge, abruptly bent at their apex and armed with two stout blunt teeth, with a smaller tooth in the middle of their fork; the head delicately striated, the striæ longitudinal on the prominence which extends from the insertion of the antennæ to the junction of the lateral sulcations on the face; the vertex obliquely striated, as well as the anterior sulcations. Thorax striated, the striation of the prothorax having a circular direction; that on the meso- and metathorax transverse; the legs palest at the joints. The abdominal peduncle spined at the apex, as in *O. hæmatodes*, and striated transversely. The abdomen ovate, smooth and shining.

Hab. Australia.

Genus 2. DREPANOGNATHUS.

Harpegnathos, Jerdon, *Madr. Journ. Lit. & Sci.* 103 (1851) (nec *Wesm. Col.* 1834); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 100.

Head elongate; eyes lateral, large, ovate and placed forward on the head, touching the base of the mandibles; the mandibles one-third longer than the head, bent, and curving upwards; their

inner edge serrated, armed beneath, near their base, with a stout tooth; the antennæ placed forward on the head. Thorax twice the length of the head; the prothorax swollen at the sides, the sides of meso- and metathorax parallel. The peduncle incrassate; the apical margin of the first segment of the abdomen constricted.

1. *DREPANOGNATHUS SALTATOR*. Pl. V. figs. 18, 19.

Harpegnathos saltator, Jerdon, *Madr. Journ. Lit. & Sci.* (1851) 116; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 100.

"Worker: head long and granulated; jaws with a strong tooth near the base pointing downwards and inwards, and thence gradually tapering to the tip, and finely serrated, $\frac{1}{8}$ of an inch long; thorax barely grooved; abdominal pedicle small, low, ovate; abdomen very long; sting large; head and abdomen blackish-brown; thorax and legs rufous. Length $\frac{3}{4}$ of an inch.

"I have given it the name of *saltator* from its power of making most surprising jumps, which it does when alarmed or disturbed. It is very pugnacious, and bites and stings severely. It makes its nest underground, generally about the roots of some plant. Its society does not consist of many individuals. It appears to feed on insects, which it seizes alive."—(Jerdon.)

2. *DREPANOGNATHUS CRUENTATUS*. B.M.

Worker. Length $6\frac{1}{2}$ lines.—Head, thorax and peduncle of the abdomen red; the antennæ, mandibles and legs pale rufo-testaceous. The head, thorax and abdominal peduncle coarsely granulated; the ocelli in triangle, approximate, placed about the middle of the head. The abdomen smooth and shining, about two-thirds of the length of the thorax; the first segment strongly punctured at the base, the following with a few scattered delicate punctures, the apical margins narrowly testaceous.

Hab. Hong Kong.

Mr. J. C. Bowring informs me that this species has the power of making surprising leaps,—a fact also mentioned by Jerdon in his description of the Indian species.

3. *DREPANOGNATHUS VENATOR*. B.M.

Worker. Length $6\frac{1}{2}$ lines.—Exactly similar in form to *cruentatus*, but with the head, thorax and abdomen black; the legs and mandibles pale rufo-testaceous, the femora and tibiae with dusky lines outside. Abdomen finely granulated and opaque.

Hab. Madras.

This species very closely resembles *cruentatus*, but the joints

of the antennæ are much shorter, and the abdomen is granulated, the base being coarsely punctured. Whether either of the two species last described is the *saltator* of Jerdon it is impossible to determine satisfactorily; he says, "abdomen *very long*; sting large; head and abdomen blackish-brown; thorax and legs rufous." The abdomen in both of the new species is *short*.

Genus 3. PONERA.

Formica, pt., *Latr. Hist. Nat. Fourm.* 195 (1802).

Ponera, *Latr. Gen. Crust. et Ins.* iv. 128 (1804).

Maxillary palpi 2-jointed (in the European species): 4-jointed (in most exotic ones); the labial palpi 2-jointed; ocelli obsolete in the workers; eyes present in all the sexes (in the European species the workers are destitute of eyes). The scale of the petiole thickened, nodiform, the first segment of the abdomen more or less constricted. Females and workers furnished with a sting. Anterior wings with one marginal, two complete submarginal cells, and one discoidal cell.

Species of Europe. (Sp. 1-3.)

1. *PONERA CONTRACTA*. Pl. VI. figs. 9-12. B.M.

Formica contracta, *Latr. Hist. Nat. Fourm.* 195. t. 7. f. 40.

Fabr. Syst. Piez. 410. 58.

Ponera contracta, *Latr. Gen. Crust. et Ins.* iv. 128.

St. Farg. Hym. i. 195. 8.

Steph. Ill. Brit. Ent. Supp. 15. t. 42. f. 2.

Foerst. Hym. Stud. Form. 45.

Schenck, Nass. Ameis. 72.

Smith, Brit. Form. 113.

Mayr. Form. Austr. 116.

Nyland. Form. Fr. et Algér. 75. 1.

Hab. Europe; Madeira.

2. *PONERA QUADRINOTATA*.

Ponera quadrinotata, *Losana, Form. Piem.* 320.

Mayr. Form. Austr. 117 (note).

Nyland. Form. Fr. et d'Algér. 76 (note).

Hab. Europe.

3. *PONERA OCHRACEA*.

Ponera ochracea, *Mayr. Form. Austr.* 118.

Nyland. Form. Fr. et d'Algér. 76 (note).

Hab. Italy.

Species of India and East India Islands. (Sp. 4-25.)4. *PONERA SCULPTA.*

Ponera sculpta, Jerdon, *Madr. Journ. Lit. & Sci.* p. 117 ♂; *Ann. & Mag. Nat. Hist.* xiii. 101 (1854).

Hab. Malabar.

Mr. Jerdon says this is one of the commonest species of Ant in Malabar, extending from the level of the sea up to the top of the Neilgherries. It lives in the ground in small societies, often making its nest in a flower-pot, occasionally under a large stone. It does not work in concert, being generally seen solitary. It lives on animal substances, but apparently will occasionally take vegetable substances.

5. *PONERA STENOCHÉILOS.*

Ponera stenocheilos, Jerdon, *Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 101 (1854).

Hab. Malabar.

6. *PONERA PROCESSIONALIS.*

Ponera processionalis, Jerdon, *Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. India.

Of this species Mr. Jerdon says, "I have met with this species over most of India. It lives in the ground in very numerous societies, and is most frequent in jungly districts; occasionally a vast column of them, 3 or 4 feet deep, may be seen crossing a road, and I have traced the column for forty and fifty yards. It stings very severely."

7. *PONERA AFFINIS.*

Ponera affinis, Jerdon, *Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. Malabar.

8. *PONERA PUMILA.*

Ponera pumila, Jerdon, *Madr. Journ. Lit. & Sci.* 119; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. Malabar.

9. *PONERA SCALPRATA.* Pl. VI. figs. 21, 22.

B.M.

Length $6\frac{1}{2}$ lines.—Black: the head longitudinally striated;

the thorax with circular striæ in front, on the disk it is longitudinal and oblique on the sides, curving upwards to the lateral margins of the truncation of the metathorax; the truncation oblique and transversely striated; the interstices of the striæ roughened, particularly on the head and thorax anteriorly; the antennæ reaching to the apical margin of the first segment of the abdomen. Abdomen oblong-ovate; the peduncle compressed, rounded in front, and armed above on the verge of the truncation with two acute spines pointing backwards; beneath, furnished with an acute spine in the middle; the truncation transversely striated; the apical margin of the first segment constricted, those of the following segments and the apex obscurely ferruginous.

Hab. Northern India.

10. PONERA IRIDIPENNIS.

B.M.

Male. Length $3\frac{1}{4}$ lines.—Dark rufo-testaceous: the antennæ and mouth pale rufo-testaceous; the head smooth and shining, the ocelli very prominent. Thorax very smooth and shining; wings hyaline and beautifully iridescent, the nervures pale testaceous, the tegulæ, posterior margin of the prothorax, the base and apex of the femora, the tibiæ and the tarsi, pale rufo-testaceous. Abdomen elongate, slightly strangled at the apex of the first segment; the apical margins of the three basal segments and the whole of the following segments pale rufo-testaceous; the node of the abdomen conical; the insect covered with a short thin downy pile.

Hab. North Bengal.

11. PONERA RETICULATA.

B.M.

Male. Length $3\frac{1}{2}$ lines.—Black: head transverse, eyes prominent, the mandibles and palpi pale rufo-testaceous; the antennæ obscurely fusco-ferruginous, the extreme apex pale testaceous. Thorax transversely reticulated; the pro- and metathorax rugose; the mesothorax with a smooth impressed line on each side over the tegulæ; the wings fusco-hyaline, the nervures and stigma testaceous; the tarsi ferruginous. Abdomen: the peduncle conical, the abdomen with a fine thin sericeous pile and sprinkled with long fuscous hairs.

Hab. Birmah.

12. PONERA PALLIDA.

B.M.

Male. Length 3 lines.—Pale yellow testaceous: antennæ ferruginous, the tibiæ and tarsi slightly fuscous, the eyes

wings subhyaline and iridescent, the nervures rufo-testaceous; a deep constriction between the first and second segments of the abdomen, the node cylindrical, the apex obtuse.

Hab. Birmah.

13. PONERA RUBRA.

Female. Length $3\frac{1}{2}$ lines.—Bright chestnut-red, smooth and impunctate: the head dusky before the ocelli; the mandibles serrated on their inner margin; the antennæ as long as the thorax, slightly thickened towards their apex. Thorax widest in front, the disk slightly fuscous; the metathorax obliquely truncate, the truncation smooth and shining; the anterior margin of the prothorax rounded. The node of the peduncle rounded in front and truncate behind. Abdomen elongate-ovate, pointed and pubescent at the apex.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

14. PONERA GEOMETRICA.

Worker. Length 5 lines.—Black, with more or less of a bronze tint: head, thorax and base of the abdomen striated, the striæ on the head longitudinal; the clypeus angulated in front; the mandibles ferruginous. Thorax rounded anteriorly, the disk with a number of transverse striæ in front, which are enclosed by circular striæ, beyond, the striation runs in an elongate-oval direction; the sides of the thorax obliquely striated; the legs obscurely ferruginous. Abdomen: the first segment with a beautiful even-curved striation; the node of the peduncle incrassate, rounded in front, truncate behind, the margin of the truncation deeply emarginate above, the lateral angles of the emargination produced into long stout acute spines; the node with a curved striation, the curve being forwards; the apical segments smooth and shining, covered with silky cinereous pubescence.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

15. PONERA TRANSVERSA.

B.M.

Worker. Length 4 lines.—Black: the head deeply striated, the striæ on the vertex diverging from the centre; the antennæ scarcely as long as the thorax, inserted at the side of two ridges, forwards on the face at the base of the clypeus; the elevations, extreme base of the scape and the mandibles obscurely ferruginous. Thorax elongate, the sides straight, slightly narrowed from the front towards the abdomen; the margin of the thorax rounded in front, the lateral angles furnished with a short obtuse

spine, there are also two very short obtuse spines on the verge of the oblique truncation of the metathorax; the legs ferruginous. Abdomen obscurely rufo-piceous, covered with fine cinereous pile, and sprinkled with long pale hairs; the scale, viewed sideways, is wedge-shaped, the upper edge deeply notched, behind transversely striated.

Hab. Singapore.

16. *PONERA PALLIPES.*

B.M.

Male. Length 4 lines.—Rufo-testaceous; the legs, antennæ, mandibles and palpi pale testaceous, tips of the joints pale ferruginous. Thorax roughly punctured, the metathorax and node of the abdomen rugose; the first segment of the abdomen subpetiolate, with a minute tubercle on each side. The wings hyaline, the nervures pale testaceous, the stigma brown. The abdomen smooth and shining.

Hab. Java.

17. *PONERA VERSICOLOR.*

B.M.

Worker. Length $4\frac{1}{2}$ lines.—Black, with purple, violet and green tints in different lights: the head deeply striated longitudinally, the striæ terminating at the base of the clypeus, the anterior margin of which is subangular; the mandibles obscurely ferruginous, their inner edge toothed, the teeth being alternately one large and one small, the mandibles finely striated; the eyes ovate, of moderate size, placed laterally about the middle of the head. Thorax in front with deep circular striæ, behind which are a few longitudinal ones on the disk; the posterior portion obliquely striated, the apex transversely so; the apical joints of the tarsi and the calcaria ferruginous. The node of the abdomen incrassate, rounded in front and above, and truncated behind, with two short sharp spines on the verge of the truncation, pointing backwards; the first segment with transverse curved striæ.

Hab. Philippine Islands; Sarawak.

In the 'Catalogue of Ants found in Southern India,' by Mr. T. C. Jerdon, a species, *Ponera sculpta*, is described as having the whole body curiously sculptured, being channelled and grooved in different directions; there are, however, three or four very distinct species, curiously sculptured, and the description of *P. sculpta* is too general to decide which, if any, of those in the Museum Collection are identical with that species.

18. *PONERA APICALIS*.

Female. Length $3\frac{1}{2}$ lines.—Black: the antennæ, mandibles, legs, and apex of the abdomen ferruginous; the head finely shagreened. Thorax oblong-ovate, finely longitudinally rugulose; the sides of the metathorax coarsely rugose, the truncation transversely striated; the node of the peduncle incrassate, rounded above, and transversely striated in front and behind; the abdomen shining, and with a fine thin grey pubescence.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

19. *PONERA IRIDESCENS*.

Worker. Length $2\frac{1}{2}$ lines.—Rufo-fuscous, smooth and shining, with iridescent tints of blue; antennæ and legs, the apex of the metathorax, and the apical margins of the segments of the abdomen, ferruginous; the head with an abbreviated impressed line above the insertion of the antennæ; the mandibles with their inner margin serrated, and three larger teeth at their apex; the scale of the abdomen compressed, elevated and rounded above. Abdomen oblong, the apical margin of the first segment slightly constricted.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

20. *PONERA RUGOSA*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Ferruginous; the head coarsely and deeply punctured, the punctures semi-confluent; the antennæ short and thick; the flagellum clavate and pubescent; the mandibles longitudinally grooved. Thorax oblong, widest in front, the anterior margin rounded, the lateral angles acute; the metathorax truncate; the prothorax with large deep confluent punctures; the mesothorax longitudinally grooved; the scutellum and metathorax ruggedly punctured. The abdomen longitudinally grooved, the grooves on the basal segment punctured; the node of the peduncle rugged and globose: beneath, furnished with a remarkable semitransparent flattened appendage.

Hab. Borneo (Sarawak).

21. *PONERA INTRICATA*.

B.M.

Worker. Length 5 lines.—Black and shining: the mandibles, legs, and apex of the abdomen ferruginous; the flagellum obscurely ferruginous; the head evenly and deeply grooved, longitudinally so on the face, and transversely so on the vertex; the antennæ as long as the insect. Thorax: the dilated portion with transverse grooves on the disk, enclosed by curved ones;

the thorax beyond much compressed, with a central longitudinal groove above, the sides obliquely striated; the truncation of the apex oblique and transversely striated. The node of the abdomen compressed, rounded in front and above, and obliquely grooved; the margin of the truncation with two acute spines above, directed backwards. The basal segment of the abdomen with curved striæ, slightly impressed and obliterated at the sides; the apical margins of the segments rufo-piceous.

Hab. Borneo (Sarawak).

22. PONERA VIDUA.

Male. Length 4 lines.—Red-brown: antennæ elongate, fusco-ferruginous, the base and apex of the joints pale testaceous; eyes large and prominent, the ocelli large and of glassy brightness. Thorax elongate-ovate; the metathorax truncate, with the sides rugose; the wings hyaline, the nervures pale yellow, the stigma brown; legs pale testaceous. Abdomen smooth and shining, with a thin scattered pale pubescence, most dense towards the apex; a deep stranguination between the first and second segments; the node of the peduncle incrassate, coarsely rugose, rounded in front and truncate behind: beneath, furnished with two short teeth.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

23. PONERA DIMINUTA.

B.M.

Worker. Length 3 lines.—Black: the mandibles and extreme base of the scape ferruginous, the flagellum fusco-ferruginous; the head elongate, narrowed behind; delicately striated, the striæ curved transversely on the vertex. Thorax elongate, produced anteriorly into a neck, behind which it is swollen: in the middle it is compressed, and from thence widened to the apex; the apex obliquely truncate, the truncation with a few deep transverse striæ; the thorax above has a number of short irregular striæ or scratches; the legs rufo-piceous, the tarsi palest. Abdomen: the scale or node, viewed laterally, is quadrate; above, it is slightly widest behind and truncated in front and behind; the first segment rounded in front, its apical margin constricted, the second segment is also constricted at the base; the abdomen is smooth and shining, with the apical margins of the segments and the apex rufo-piceous.

Hab. Borneo (Sarawak).

This species, on a smaller scale, is almost an exact representative of the *P. tarsata*.

24. *PONERA POMPILOIDES*.

B.M.

Male. Length 3 lines.—Black: antennæ elongate and finely pubescent. Thorax elongate-ovate, obscurely ferruginous in front and behind; wings subhyaline, the nervures pale testaceous, the stigma brown; the apex of the coxæ and the base of the femora rufo-piceous; the apical joints of the tarsi pale ferruginous. Abdomen elongate, with a scattered pale downy pubescence; the apical margin of the first segment slightly constricted; the node of the peduncle conical and rufo-piceous.

Hab. Borneo (Sarawak).

25. *PONERA LÆVICEPS*.

Worker. Length 3 lines.—Black, smooth and shining: the head elongate, with a few striæ on each side of the clypeus; the latter triangular, with a central longitudinal raised carina; above the clypeus a central impressed line runs half way towards the posterior margin of the vertex. Thorax narrowed into a short neck in front, behind which it is swollen, thence it is compressed and narrowed to the apex, which is oblique and transversely rugose; the tarsi pale rufo-testaceous. Abdomen: a deep strangulation between the first and second segments; the node of the peduncle rounded and elevated.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

Species of Africa. (Sp. 26–35.)

26. *PONERA GAGATES*.

Ponera gagates, *Guér. Icon. Règ. Anim. Ins.* iii. 423 ♂.

Hab. Senegal.

27. *PONERA ABYSSINICA*.

Ponera Abyssinica, *Guér. Voy. en Abyss.* vi. 352. t. 7. f. 6.

Hab. Abyssinia.

28. *PONERA DENTICULATA*. Pl. VI. figs. 13, 14.

Female. Length $4\frac{1}{2}$ lines.—Black: the head wider than the thorax, oblong-quadrate; the antennæ, mandibles, and margins of the carina between the antennæ, obscurely ferruginous; the anterior margin of the clypeus regularly denticulate; the mandibles with five long acute teeth; the head strongly longitudinally striated. Thorax above, deeply and transversely striated, the scutellum longitudinally, and the sides obliquely so; the anterior tarsi clothed beneath with golden-yellow pubescence; the tibiae

and tarsi obscurely fusco-ferruginous; wings fusco-hyaline, the nervures testaceous. Abdomen ovate; the node of the peduncle compressed above, its superior margin rounded and deeply notched in the middle.

Hab. Cape of Good Hope. (Coll. Frederick Smith.)

29. *PONERA ATTENUATA*.

Worker. Length 3 lines.—Shining-black: narrow, elongate, smooth and impunctate. The antennæ fusco-ferruginous, palest towards their apex; the mandibles and face anteriorly rufo-testaceous. The tarsi and articulations of the legs rufo-testaceous; the thorax strangled in the middle, compressed posteriorly. Abdomen strangled between the first and second segments; the posterior margins of the segments rufo-testaceous.

Hab. Cape of Good Hope. (Coll. W. W. Saunders, Esq.)

30. *PONERA ÆTHIOPICA*. Pl. VI. figs. 19, 20. B.M.

Worker. Length 8 lines.—Black: the head and thorax opaque, the abdomen shining; the mandibles ferruginous, with the base black, their apex acute, the inner margin not toothed. Thorax rounded and swollen in front, compressed behind; the anterior tarsi clothed with ferruginous pubescence beneath; the extreme apex of the femora and the tibiæ and tarsi obscurely rufo-piceous. Abdomen ovate, slightly constricted at the apex of the first segment; the node of the peduncle compressed, much elevated, rounded in front and truncate behind; the truncation slightly curved, the apex acute above; the extreme apex of the abdomen and the apical margins of two or three of the basal segments narrowly rufo-piceous.

Hab. South Africa.

31. *PONERA CAFFRARIA*. B.M.

Female. Length 4 lines.—Black: head rather wider than the thorax, oblong, with the eyes placed forwards on the sides, opposite to the insertion of the antennæ, behind emarginate, the posterior angles rounded; the mandibles and apex of the antennæ ferruginous. Thorax oblong-ovate, about the same length as the head, measuring to the tip of the mandibles; the wings fusco-hyaline, the nervures testaceous; the legs fusco-ferruginous, sometimes clear ferruginous. Abdomen ovate, about the same width as the head, the apex pale rufo-testaceous; the node of the peduncle compressed, the superior margin rounded; very similar to the scale of a *Formica*, being flattened, but broadest at the base.

Hab. Port Natal.

32. *PONERA NITIDA*.

B.M.

Worker. Length 2 lines.—Black, smooth and shining: the extreme base and apex of the scape, and the flagellum, ferruginous. Thorax slightly swollen anteriorly, compressed in the middle and slightly widened to the apex of the metathorax, which is obliquely truncated; the scale incrassate, rounded in front and truncate behind. Abdomen oblong, rounded at the base and pointed at the apex, slightly constricted between the first and second segments.

Hab. Port Natal.

33. *PONERA PESTILENTIA*.

B.M.

Worker. Length $5\frac{1}{2}$ – $6\frac{1}{2}$ lines.—Black: the head longitudinally and finely striated; the mandibles large, shining, somewhat elongate, their inner edge serrated irregularly with minute and larger teeth, delicately striated, and with a few scattered punctures; the extreme apex of the antennæ rufo-piceous. Thorax: the pro- and mesothorax longitudinally striated, the striation on the former curved anteriorly; the metathorax transversely striated; the legs more or less obscurely ferruginous, nearly black, with the apical joints of the tarsi usually dark rufo-piceous. The calcaria pale rufo-testaceous, the anterior tarsi clothed with ferruginous pubescence beneath. Abdomen oblong; the first segment truncated at the base, narrower than the second segment and slightly strangulated at the apex; the first segment is pinched at the base beneath into a sharp carina and furnished with a short spine; the peduncle elevated, subcylindrical, and rounded or blunt at its apex above.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

34. *PONERA SPINIVENTRIS*.

B.M.

Male. Length $6\frac{1}{2}$ lines.—Black: with flavo-hyaline wings, the nervures rufo-piceous. Head much narrower than the thorax; the antennæ setaceous, longer than the thorax; head and thorax both covered with a thin downy pubescence; the calcaria and claw-joint of the tarsi testaceous. Abdomen elongate, longer than the head and thorax, the apical margins of the segments constricted; the basal segment with a short blunt tooth or spine at the base beneath; the node of the peduncle incrassate, obtuse above, and, as well as the abdomen, covered with a short downy pubescence.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

In all probability this is the male of *P. pestilentia*.

5. *PONERA MAXILLOSA.*

B.M.

Worker. Length 3 lines.—Black: antennæ, mandibles and legs ferruginous; sometimes the head and thorax fusco-ferruginous, others with the coxæ and scape of the antennæ fuscous; pale and subpunctate. Head subquadrate, wider than the thorax or abdomen; eyes ovate, placed before the middle on the sides of the head; mandibles elongate, curved, of nearly equal thickness throughout, not toothed. Thorax narrowed behind, the metathorax obliquely truncate and slightly concave. Abdomen strangulated between the first and second segments; the apical margins of the segments rufo-piceous; the terminal segment rufo-testaceous; the node of the peduncle incrassate, rounded above, elevated to the height of the first segment.

Male. Length $2\frac{3}{4}$ lines.—Black and slightly shining, finely punctured: eyes and ocelli very large, the latter glassy bright and very prominent; the legs and antennæ fusco-ferruginous; the antennæ towards their apex, the articulations of the legs, the tarsi, and tip of the abdomen, ferruginous; wings fusco-hyaline; abdomen and node of the peduncle as in the female.

Hab. Mauritius. (Coll. Dr. Beke.)

Species of Australia. (Sp. 36-39.)

36. *PONERA AUSTRALIS.*

B.M.

Formica Australis, *Fabr. Syst. Ent.* 393. 16; *Ent. Syst.* ii. 359. 41; *Syst. Piez.* 410. 59.

Oliv. Encycl. Méth. vi. 497. 33.

Latr. Hist. Nat. Fourm. 128.

Hab. Australia.

37. *PONERA RUGINODA.*

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: thinly covered with a loose silky cinereous pile; head and thorax roughly punctured; the mandibles ferruginous, more or less black at their base. Thorax: the metathorax rugose, the tibiæ and tarsi ferruginous; the wings hyaline, the nervures testaceous, the stigma fuscous. Abdomen: the node of the peduncle subovate and coarsely rugose; the first segment deeply strangulated, much narrower than the second; the apical margins of the third and following segments obscurely rufo-piceous.

Hab. Australia.

38. *PONERA OCULATA.*

B.M.

Male. Length 5 lines.—Reddish-yellow: head black, with

the clypeus, mouth, and antennæ, reddish-yellow; the ocelli very large and projecting. Thorax oblong-ovate, with a loose, downy pubescence; wings hyaline, the nervures pale testaceous, the stigma fuscous. The scale incrassate, rounded in front and truncate behind. Abdomen oblong, with a strangulation between the first and second segments.

Hab. Australia (Macintyre River).

In the Museum Collection are two specimens of this insect: one has a short nervure emanating from the middle of the second transverso-medial nervure towards the apex of the wing; in other respects they exhibit no material difference.

39. *PONERA METALLICA.* Pl. VI. figs. 17, 18.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Head, thorax and abdomen of various metallic colours; the head usually green behind the eyes, in front ferruginous, with a purple tint more or less obvious between those colours; the antennæ ferruginous; eyes ovate and prominent; the head deeply emarginate posteriorly; the head, thorax, and node of the abdomen rugose, being covered with large, deep, confluent punctures; the basal segment of the abdomen with transverse curved striæ. Thorax: the colour usually greenish; wings subhyaline, the nervures testaceous; the legs ferruginous. Abdomen purple, the apex ferruginous.

Worker. This sex only differs in having the thorax more compressed and elongate, and in having the abdomen frequently of a green tint.

Hab. Australia (Adelaide).

Species of South America. (Sp. 40–58.)

40. *PONERA TARSATA.* Pl. VI. figs. 15, 16.

Formica tarsata, *Fabr. Ent. Syst. Supp.* 280. 38 ♂; *Syst. Pic.* 408. 53.

Latr. Hist. Nat. Fourm. 200. pl. VII. f. 44. A. ♂, B ♀.

Halid. Trans. Linn. Soc. xvii. (1837).

Ponera tarsata, *St. Farg. Hym.* i. 194. 7.

Hab. South America; Demerara; Brazil; Para.

Fabricius appears to be in error in giving the habitat Senegal to this species in the Supplement to the 'Entomologia Systematica,' and it is repeated in the 'Systema Piezatorum.' I think there can be no doubt that the figure in Latreille's 'Fourmis' represents the South American species; and Fabricius quotes the figure as representing his *F. tarsata*. Be this as it may, the more minute description of Latreille is certainly that of the South American species.

41. *PONERA GRANDIS*.

B.M.

Length 10 lines.—Black with a blue tinge: head subquadrate, eyes small; mandibles large, strongly dentate; thorax globose in front, compressed laterally in the middle; the node of the abdomen thick, compressed at the sides, rounded in front, and truncate posteriorly; the legs elongate, the anterior tarsi with rufescent pile beneath.

Ponera grandis, Guér. *Voy. Cqg. Zool.* ii. 206 ♀.

Hab. Brazil.

42. *PONERA FÆTIDA*.

Formica fœtida, Oliv. *Encycl. Méth.* vi. 502.

Latr. Hist. Nat. Fourm. 206.

De Geer, Hist. des Ins. iii. 602. pl. 31. f. 6 ♀.

Hab. South America.

43. *PONERA FLAVICORNIS*.

Formica flavicornis, Fabr. *Ent. Syst. Supp.* 280. 38; *Syst. Piez.* 408. 52.

Latr. Hist. Nat. Fourm. 202. pl. vii. f. 43 ♂, f. 42. B ♀?

St. Farg. Hym. i. 190. 2.

Hab. Cayenne.

44. *PONERA PILOSULA*.

Worker. Length $2\frac{1}{2}$ lines.—Obscure dark-red-brown, with the antennæ, mandibles, legs, margins of the segments of the abdomen and its apex, more or less ferruginous; the insect entirely covered with a fine silky pile, or bloom; the head, thorax, node and basal segment of the abdomen with scattered punctures; the thorax and node at their apex concavely truncate, the truncation smooth, the node oblong, rounded anteriorly.

Hab. Brazil. (Coll. F. Smith.)

A variety of this species is found, entirely pale ferruginous.

45. *PONERA PILOSA*.

B.M.

Male. Length 7 lines.—Black: covered with a fine, thin, changeable, silky pile; anterior margin of the clypeus rounded; the palpi pale testaceous; antennæ three-fourths of the length of the body. Thorax: the disk slightly pubescent; the metathorax shining; wings fusco-hyaline; the tarsi rufo-testaceous. Abdomen elongate and cylindrical; the apical margin of the first segment constricted; the node incrassate, subquadrate, rounded above.

Hab. Brazil (Villa Nova).

46. *PONERA PEDUNCULATA*. Pl. VI. fig. 25.

B.M.

Worker. Length $6\frac{1}{2}$ lines.—Black: covered with a pale golden-yellow pubescence; the head rather wider than the thorax; the mandibles produced forwards, forming an elongated triangle, their inner edge serrated; the antennæ nearly as long as the thorax. Thorax: the disk somewhat flattened anteriorly, with the angles of the anterior margin acute; the meso- and meta-thorax pinched above, forming a central sharp edge down the middle above; the apex of the metathorax obliquely truncated; the calcar at the apex of the tibiæ pale testaceous. Abdomen: the node of the peduncle incrassate, its anterior margin vertical, from the apex of which it is gradually rounded behind to its base; a deep strangulation between the first and second segments, the apex of the abdomen acute.

Hab. Brazil. Rio (Constantia).

Specimens of this species have the golden pubescence usually more or less obliterated.

47. *PONERA LINEARIS*.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Black: smooth, shining, and thinly covered with a pale downy pile; the antennæ, mandibles and legs ferruginous, their apex acute, their inner margin not toothed or serrated; the clypeus triangular, the sides oblique, forming an acute edge down the middle. Thorax elongate, the sides nearly parallel, or very slightly swollen anteriorly; the apex of the metathorax obliquely truncate. Abdomen oblong-ovate, the apex pale rufo-testaceous, the node of the abdomen incrassate, rounded in front and truncate behind.

Male. Length 2 lines.—Obscure rufo-testaceous, or sometimes pale rufo-testaceous; the antennæ and legs pale testaceous; the thorax oblong-ovate; the wings hyaline, with the nervures pale testaceous-yellow; the abdomen and also the node of the peduncle of the same form as in the worker.

Hab. Brazil; Santarem.

The males and workers of this species were taken from the nest by Mr. H. W. Bates.

48. *PONERA INVERSA*.

B.M.

Worker. Length 5 lines.—Black: the head longitudinally rugulose; the mandibles large, their inner edge with a row of sharp teeth. Thorax somewhat flattened anteriorly, closely and rather finely punctured, the lateral margins acute; the metathorax narrower and finely rugulose; the legs obscurely rufo-

piceous; the anterior tarsi densely clothed beneath with fulvous pubescence. Abdomen oblong subcylindrical, the base truncate; the node incrassate, anteriorly curving forwards over the metathorax, the upper surface nearly oval, shining and finely punctured.

Var. The legs and base of the abdomen castaneous.

Hab. South America (Napo).

49. *PONERA CRUELIS*. Pl. VI. figs. 23, 24. B.M.

Worker. Length $3\frac{1}{2}$ lines.—Black, elongate, smooth and shining: the mandibles, clypeus, antennæ and legs rufo-testaceous; apex of the abdomen pale rufo-testaceous. Head oblong-ovate; the clypeus with a sharp carina down the middle, the scape more or less fuscous above, the base and apex pale; the posterior margin of the head emarginate. Thorax elongate, narrowed or compressed in the middle, the apex emarginate, the lateral angles of the emargination acute or subspinose; the apical joints of the tarsi pale. Abdomen rounded at the base, strangled at the apex of the first segment, and tapering to an acute point at the apex; the sting exerted, half the length of the abdomen; the node of the peduncle subquadrate, rounded in front and truncate behind; the insect thinly sprinkled with short pale hairs.

Hab. Brazil; Rio (Constancia).

50. *PONERA CARBONARIA*.

Worker. Length $4\frac{1}{2}$ lines.—Jet-black, shining and impunctate: mandibles obscurely ferruginous, with seven or eight strong teeth on their inner margin; the head, thorax and abdomen with a thin short yellowish pubescence; the tip of the antennæ ferruginous. Thorax elongate, narrowed posteriorly, the apex obliquely truncated; the calcaria and claw-joint of the tarsi rufo-testaceous. Abdomen: the node of the peduncle incrassate, vertical in front and obliquely curved behind; the extreme apex of the abdomen rufo-testaceous.

Hab. South America (Quito). (Coll. F. Smith.)

This species resembles *P. inversa*, particularly in the form of the node of the peduncle; but the latter species has the head striated, the thorax punctured, the prothorax flattened above, and the legs and base of the abdomen more or less ferruginous.

51. *PONERA APICALIS*. B.M.

Formica apicalis, Latr. *Hist. Nat. Fourm.* 204. pl. 7. f. 42. A.

Hab. South America; Brazil (Para).

52. *PONERA LÆVIGATA*.

B.M.

Worker. Length 4 lines.—Jet-black, highly polished and impunctate: the tibiæ, tarsi, antennæ and mandibles ferruginous, the antennæ more or less dusky; the mandibles with seven or eight fine teeth, and very smooth and shining. Thorax elongate; the metathorax obliquely truncate, the sides finely striated. Abdomen: a deep strangulation between the first and second segments, the apex rufo-piceous; the node of the peduncle incrassate, elevated to the height of the first segment, and rounded above; the abdomen thinly sprinkled with pale hairs.

Hab. Brazil (Ega.) (Coll. H. W. Bates.)

53. *PONERA PALLIPES*.

B.M.

Female. Length 6 lines.—Black: covered with a fine silky cinereous pile and scattered pale hairs; the mandibles ferruginous, the anterior margin of the face obscurely so; the antennæ dark rufo-piceous; the legs pale ferruginous; the wings flavo-hyaline, the nervures pale testaceous; the mandibles porrect, slightly curved downwards, with their inner margin serrated; the anterior margin of the face angular, with short striæ, particularly the central portion, the central point blunt. Abdomen elongate; a slight strangulation between the first and second segments; the node of the peduncle incrassate, rounded above, truncate before and behind.

Hab. Brazil (Para).

54. *PONERA MORDAX*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Black: the antennæ and legs fusco-ferruginous, the joints of the legs and the tarsi palest. Head longitudinally and strongly striated; the mandibles curved, of nearly equal width, their apex rounded, their inner margin denticulate; the clypeus slightly depressed in the middle, with the anterior margin slightly emarginate. Thorax ovate; the prothorax, mesothorax, and the base of the metathorax, striated longitudinally, the truncation of the latter transversely striated; the node of the abdomen transversely striated and subglobose; the first and second segments longitudinally and more finely striated than the head and thorax, the following segments smooth, shining and rufo-piceous.

Worker.—Rather smaller than the female, similarly sculptured except the second segment of the abdomen, which is only striated at the base, the apical half being smooth and shining.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

55. *PONERA TORTUOLOSA*.

Worker. Length 3 lines.—Black: the mandibles, antennæ and legs ferruginous. Head subquadrate, striated, the striæ running obliquely from the centre on each side, beneath, the striation runs in a transverse curve; eyes rather prominent. Thorax striated, the striæ running gradually obliquely inwards in front, and crossing in a transverse curve over the metathorax. The node of the peduncle incrassate, its anterior margin rounded, and the first two segments of the abdomen striated, the striation very regular and beautiful, describing two-thirds of a circle; the two basal segments longitudinally striated.

Hab. Brazil. (Coll. F. Smith.)

56. *PONERA SULCATA*.

B.M.

Worker. Length 3 lines.—Reddish-yellow, with the head black, the antennæ and mandibles pale testaceous-yellow, and semitransparent; the head and thorax longitudinally furrowed or striated, the node of the peduncle and the second segment of the abdomen are similarly striated; the first segment with the striæ curving inwards and uniting at the apex of the segment. The insect has a general semitransparent appearance, and in certain lights the furrows have a bright golden effulgence.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

57. *PONERA ALIENA*.

Worker. Length $1\frac{1}{2}$ line.—Scarcely differing from the *Ponera contracta* of Europe; the antennæ are however rather shorter, and the apical joint longer; the legs are shorter and thicker; but the most distinctive difference is the thickness of the scale, or node of the petiole, which in the present species is much thicker, particularly at its upper margin; in other respects they scarcely differ: the eyes are wanting, as in *P. contracta*: the palpi have not been examined.

Hab. Brazil. (Coll. W. Swainson.)

This species doubtless resembles very closely the *Ponera ruficornis* of Spinola, but he describes his insect as black, with red antennæ: our species is entirely of a brownish-yellow, and appears to be distinct.

58. *PONERA RUFICORNIS*.

Ponera ruficornis, *Spin. Mem. Accad. Torino*, xiii. 69. 51 (1853).

Hab. Brazil (Para).

This species is about the same size as the *Ponera contracta* of Europe, which it also closely resembles.

Species of Mexico.

59. *PONERA FERRUGINEA.*

B.M.

Female. Length $2\frac{1}{2}$ lines.—Ferruginous: the head scarcely wider than the thorax; the mandibles stout and strongly denticulate on their inner margin; the head slightly emarginate behind. Thorax oblong-ovate, the metathorax obliquely truncated, the truncation smooth and shining. The abdomen elongate-ovate; the node of the peduncle incrassate, its superior margin rounded, slightly convex in front and concave behind, the concavity smooth and shining.

Hab. Mexico.

60. *PONERA BICOLOR.*

Ponera bicolor, Guér. *Icon. Règ. Anim. Ins.* iii. 424.

Hab. Mexico.

Genus 4. *PARAPONERA.* Pl. VII. figs. 7, 8, 9.

Head subquadrate, with the angles rounded, slightly narrowed posteriorly; the eyes circular and very prominent, situated a little before the middle, at the sides of the head; the antennæ inserted forward on the face in deep cavities close to the base of the clypeus; mandibles large, triangular, dentate on their inner edge; the labial palpi 3-jointed, the maxillary palpi 5-jointed; the node of the abdomen incrassate; the abdomen with a deep strangulation between the first and second segments.

This insect, which is now separated from the genus *Ponera*, will not range in any of the subdivisions here described; in the prominence of the eyes it agrees with the genus *Ectatomma*, but the labial and maxillary palpi are composed of a different number of joints.

1. *PARAPONERA CLAVATA.* Pl. VII. fig. 6.

B.M.

Formica clavata, Fabr. *Syst. Ent.* 394. 18 ♂; *Ent. Syst.* ii. 360. 44; *Syst. Piez.* 410. 61.

Formica armata, Oliv. *Encycl. Méth.* vi. 498. 42.

Formica spininoda, Latr. *Hist. Nat. Fourm.* 207 ♀ ♂.

Ponera tarsalis, Perty, *Del. An. Art.* 135. t. xxxvii. f. 2 ♀.

Ponera clavata, Erichs. *Faun. et Flo. Brit. Guiana*, iii. 592.

Hab. South America (Napo); Brazil (Para).

The male of this species resembles the female in the form of the abdomen and node of the peduncle, they are, however, smoother and more highly polished; all the specimens which I have examined are of a paler colour, being more or less obscurely ferruginous; the head narrower than the thorax, the eyes large and prominent, and the antennæ three-fourths of the length of the body.

Genus 5. PLECTROCTENA.

Head subquadrate; antennæ shorter than the head and thorax; the flagellum clavate, inserted very forward on the face near its anterior margin on each side of a central protuberance, which is advanced over and conceals the clypeus; the anterior margin of the latter widely emarginate; eyes small and ovate, not prominent, situated very forward on the sides of the head near the base of the mandibles; mandibles elongate, very slightly bent and crossing each other, their inner margin with a blunt tooth towards their base; the labial palpi 4-jointed; the maxillary palpi 3-jointed. Thorax oblong; the calcar at the apex of all the tibiæ, pectinate within. Abdomen oblong, with a deep strangulation between the first and second segments; the node subglobose.

This subgenus of *Ponera* differs in such remarkable peculiarities, and will not assimilate with any divisional group yet proposed, that it must stand isolated for the present: the form of the mandibles appears to indicate some peculiar economy; the small advanced eyes are also remarkable: the characters, being drawn from a worker ant, will doubtless require hereafter some additions and modifications. The beautiful pectination of the tibial spurs is common to several of the *Poneridæ*, but is sometimes only to be observed on the anterior legs, as in *Ectatomma*.

1. PLECTROCTENA MANDIBULARIS. Pl. VII. figs. 1-5. B.M.

Worker. Length 5-7 lines.—Shining black: delicately and not very closely punctured; an impressed line runs upwards from the anterior margin of the elevation between the antennæ, half-way towards the vertex; the mandibles grooved longitudinally. Thorax oblong, rounded in front, slightly narrowed and obliquely truncated posteriorly, finely punctured, and the sides delicately striated; the tarsi with a fulvous pubescence, the anterior pair densely pubescent beneath. Abdomen: the first segment finely punctured, the node of the peduncle incrassate, subglobose and finely punctured.

Male. Length 4 lines.—Black: the apex of the abdomen ferruginous; head narrower than the thorax, transverse. with the

vertex slightly narrowed behind the eyes; shining and delicately punctured; the antennæ inserted in front of two elevated processes, the clypeus widely emarginate; mandibles short, not toothed and blunt at their apex. Thorax rugose, the disk with a mixture of confluent punctures and striæ; the mesothorax with two deeply impressed oblique channels running inwards and uniting at the base of the scutellum; the wings subhyaline and iridescent, the nervures testaceous, the stigma fuscous. Abdomen: the three apical segments ferruginous, of the same form as in the female, the node of the petiole also similar. The worker not known.

Hab. Port Natal.

The sexes, taken *in coitu* by Herr Gueinzius, have been received from Port Natal; he says, "solitary; I have not been able to find its nest."

Genus 6. ECTATOMMA.

Head subquadrate; antennæ inserted forwards on the face at the base of the clypeus, 12-jointed in the female, 13-jointed in the male; eyes ovate and very prominent, placed a little behind the middle at the sides of the head; maxillary palpi 2-jointed, labial palpi 2-jointed; mandibles triangular, with one or two minute teeth near their apex. Thorax: wings with one marginal and three submarginal cells, the second submarginal cell receiving the recurrent nervure near its base; legs elongate, the spur which arms the apex of the intermediate and posterior tibiæ simple, that at the apex of the anterior pair pectinate within. Abdomen: the node of the peduncle incrassate, a deep strangulation between the first and second segments.

1. ECTATOMMA TUBERCULATA. Pl. VII. figs. 10-13. B.M.

Formica tuberculata, Latr. *Fourm.* 210. viii. f. 46. A. ♂, 46. C. ♀.

Oliv. Encycl. Méth. vi. 498. 41.

Formica tridentata, Fabr. *Syst. Piez.* 412. 69.

Hab. South America; Brazil (Para; Santarem).

Male. Length 5 lines.—Fuscous or black, somewhat varying in colour: the antennæ as long as the insect. Head small, narrowed behind and transversely striated behind the ocelli, in front of which the striation is finer and longitudinal; the face has three carinæ between the antennæ, the clypeus triangular and strongly striated, the antennæ fulvous beneath; the mandibles and legs rufo-testaceous; the metathorax and node of the peduncle obscurely testaceous; the wings subhyaline, the nervures

rufo-testaceous; the mesothorax and scutellum longitudinally striated, and having two oblique impressed lines which meet in the middle. Abdomen elongate; the apical margin of the first segment constricted, the two basal segments finely longitudinally aciculate, the third and following segments smooth and shining; the apex of the abdomen pale rufo-testaceous.

Hab. Brazil (Para; Santarem). (Coll. H. W. Bates.)

The sexes of this species were taken from the nest by Mr. Bates; the females and workers do not vary much in colouring, but the males differ considerably, some examples being entirely pale rufo-testaceous.

2. ECTATOMMA BRUNNEA.

B.M.

Female. Length 5 lines.—Deep red-brown: finely striated and somewhat shining; the striation on the head, mandibles and mesothorax, longitudinal, that on the prothorax, metathorax and node of the peduncle, transverse; the basal segment of the abdomen has a very fine curved striation as well as the second segment, on the latter it is very delicate; the apical margins of two or three of the apical segments, as well as the apex itself, bright shining rufo-testaceous; the node of the abdomen incrassate, rounded and blunt at the apex; the insect with short, scattered, pale glittering hairs; the wings flavo-hyaline, the nervures pale testaceous; the metathorax has two short teeth.

Worker.—Rather smaller than the female, of the same colour and similarly striated; the thorax anteriorly produced into a short sharp angular tooth on each side; the metathorax has also two short acute teeth; the thorax is narrower and more elongate than in the female, and the apical joints of the tarsi are pale testaceous.

Hab. Brazil (Santarem).

This species, independent of its darker colour, is differently and much more finely sculptured and striated than *tuberculata*; the specimens of the latter have the head very coarsely grooved or striated, the grooves with many transverse reticulations, the posterior angles of the vertex acute; in *E. brunnea* they are rounded.

3. ECTATOMMA CONCINNA.

B.M.

Female. Length 6 lines.—Chestnut-brown: delicately and evenly striated; the striation on the head, mesothorax, scutellum, node of the peduncle and second segment of the abdomen is longitudinal, that on the prothorax is obliquely curved; on the metathorax and basal segment of the abdomen it is transversely

the apical margins of the segments rufo-piceous; the scale produced beneath into a large conical tubercle pointed at the apex.

Hab. Cape of Good Hope. (Coll. F. Smith.)

3. PACHYCONDYLA STRIATA.

B.M.

Worker. Length $6\frac{1}{2}$ lines.—Black, subopaque. Head very delicately striated longitudinally; the mandibles bent, and crossing at their apex, having a few elongate scattered punctures, and their inner margin denticulate. Thorax oblong, the sides flattened, the disk slightly convex, and longitudinally striated, the oblique truncation of the metathorax transversely so; the apical joints of the tarsi rufo-piceous; the anterior tarsi and the tibiae beneath clothed with ferruginous pubescence; the legs with a few short scattered ferruginous hairs, the calcaria ferruginous. Abdomen: the node of the peduncle incrassate, elevated to a level with the first segment of the abdomen, rounded above; when closely applied to the abdomen, forming apparently the basal segment: the apical segment with thin pale pubescence, and having an elongate naked shining narrow space in the middle; the abdomen thinly sprinkled with erect ferruginous hairs.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

This species resembles the *crassinoda* of Latreille, but is at once distinguished by its smaller size, its striated head and thorax, and by the lateral margins of the latter having a sharp edge.

4. PACHYCONDYLA RUFIPES.

B.M.

Ponera rufipes, Jerdon, *Madras Journ. Lit. & Sci.* (1851) p. 119.

Worker. Length 5-6 lines.—Black: the antennae, mandibles and legs ferruginous; head oblong, granulated and interspersed with shallow punctures; the face with a central impressed line, which extends from the anterior margin half-way towards the vertex. Thorax sculptured the same as the head, rounded in front, concavely truncate behind, and slightly narrowed posteriorly. Abdomen: the node punctured, its posterior margin serrated, and having a tooth beneath; the first and second segments longitudinally grooved, and the apical segments rufo-testaceous.

Hab. Malabar; Northern India; Hong Kong.

5. PACHYCONDYLA TRIDENTATA.

B.M.

Worker. Length 6 lines.—Black: punctured and grooved like *P. rufipes*, of which it may be a variety; the only difference

being, that, with the exception of its mandibles and the apex of the abdomen, it is black; the posterior margin of the node of the peduncle is furnished with three sharp spines, not serrated.

Hab. Borneo (Sarawak).

6. *PACHYCONDYLA PILIVENTRIS.*

B.M.

Worker. Length 6 lines.—Black: head oblong and rugose; the mandibles and antennæ obscurely ferruginous. Thorax of the same form as in *P. crassinoda*, rugose and obliquely truncated posteriorly; legs obscurely fusco-ferruginous, the apex of the joints brighter. Abdomen: the posterior margin of the node of the peduncle not serrated; the first and second segments grooved as in *P. crassinoda*, but less coarsely so; the apical segments rufo-testaceous; the abdomen covered with rather long pubescence, most dense at the apex.

Hab. Australia (Adelaide).

7. *PACHYCONDYLA BISPINOSA.*

Worker. Length 6 lines.—Closely resembling *P. rufipes*, the mandibles, legs and antennæ being red; the thorax and head similarly sculptured; the metathorax truncate, the margin of the truncation with a stout curved spine on each side; the node of the peduncle has its posterior margin denticulate, with a longer tooth at the lateral angles and a tooth beneath; the first and second segments of the abdomen longitudinally grooved; the apical segments rufo-testaceous.

Hab. Australia? (Coll. F. Smith.)

8. *PACHYCONDYLA ASTUTA.*

B.M.

Worker. Length 5 lines.—Black: the mandibles, flagellum, tibiæ and tarsi ferruginous; the head oblong and delicately striated longitudinally. Thorax elongate, rounded anteriorly and obliquely truncate posteriorly; the prothorax striated, the striae somewhat obliquely curved; the meso- and metathorax slightly rugose. The node of the abdomen compressed, thick and bent forwards, the upper margin rounded, the anterior and posterior surfaces transversely striated. Abdomen oblong, slightly pilose and shining; the posterior margins of the segments rufo-piceous, the apex ferruginous.

Hab. Australia.

9. *PACHYCONDYLA PUNCTATA*.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Black: the antennæ, mandibles, margins of the carinæ between the antennæ, the legs and apex of the abdomen, ferruginous; the head, thorax, node of the peduncle, and first segment of the abdomen with deep scattered punctures; the insect covered with grey pile; the metathorax truncate, the truncation slightly concave; the node of the peduncle incrassate, elevated to the same height as the first segment, elongated, and forming as it were a basal segment; the apical margin of the first segment ferruginous.

Male.—About the same size as the worker, which it greatly resembles, differing in the usual sexual distinctions of a smaller head, larger eyes; the ocelli very bright and glassy; the wings subhyaline, the nervures testaceous, the stigma fuscous.

Hab. St. Domingo.

10. *PACHYCONDYLA MONTEZUMIA*.

B.M.

Female. Length 4 lines.—Black: the head a little wider than the thorax, emarginate behind, with the lateral angles rounded and longitudinally rugose, rather finely so; the mandibles, anterior margin of the head, the carinæ between the antennæ, the base and apex of the scape, and also the tip of the flagellum, ferruginous. Thorax oblong-ovate; the metathorax obliquely truncate, the truncation transversely striated; the disk of the thorax longitudinally and finely rugose, the prothorax transversely so; the wings fusco-hyaline, the nervures testaceous; the tibiae and tarsi obscurely fusco-ferruginous. Abdomen oblong-ovate, thinly covered with a yellowish downy pile intermixed with a few long hairs, particularly at the apex; the node of the peduncle incrassate, of equal thickness at the base and apex, the superior margin rounded and elevated to the same height as the first segment.

Male. Length 3 lines.—Differs from the female in the usual characteristics of a smaller head and more elongate abdomen, but in other respects has a close resemblance to the other sex; the node of the peduncle is incrassate, and elevated to the same height as the first segment, but is widest at its base; the tibiae and tarsi are pale rufo-testaceous as well as the mandibles and palpi.

Hab. Mexico.

Genus 8. *AMBLYOPONE*.

Amblyopone, *Ericks. Wiegman. Archiv* (1842), p. 260.

Female. Head subquadrate; antennæ 12-jointed, the scape

subclavate; mandibles straight, toothed in the middle on their inner edge and at their apex; eyes lateral, round, and of medium size; minute in the workers; ocelli three, in a triangle on the vertex, wanting in the workers. Thorax oblong-ovate. Wings: anterior pair with one marginal and two submarginal cells, the second extending to the apex of the wings; the thorax narrowed posteriorly in the workers. Legs short and stout, claws of the tarsi simple. Abdomen: the node of the peduncle subquadrate-rotundate, a deep strangulation between the first and second segments.

Male. Head transverse. Antennæ 13-jointed; scape short and conical.

1. *AMBLYOPONE AUSTRALIS*. Pl. VII. figs. 21-24. B.M.

Amblyopone australis, *Erichs. Wieg. Archiv* (1842), p. 260 §.

Worker. Length 3 lines.—Shining ferruginous, or rufopiceous; sparingly pubescent. Head large, the vertex and front down to the insertion of the antennæ, finely but rather distantly punctured; a deep central channel extends from the middle of the head to its anterior margin; on each side the head is obliquely striated; the mandibles longitudinally striated. Thorax: the prothorax rounded in front, convex, subglobose, punctured on the sides, the disk impunctate; the metathorax oblong, the sides parallel, truncate posteriorly, rather obliquely so. Abdomen oblong, smooth and shining, with the apex pale rufo-testaceous.

The female has the head more strongly punctured, the mesothorax much larger, and the scutellum developed; the wings subhyaline, with the nervures testaceous; the prothorax, metathorax, and sides of the node of the peduncle strongly punctured.

Male. Length $2\frac{1}{2}$ lines.—Black, shining and pubescent: head and thorax strongly punctured; the head transverse, the eyes large and lateral; antennæ elongate, filiform; the antennæ, tibiæ and tarsi rufo-testaceous; wings as in the female.

Erichson only describes the worker of this species: the male and female are in the Museum Collection.

2. *AMBLYOPONE OBSCURA*.

B.M.

Female. Length 4 lines.—Black and shining: the antennæ, mandibles, and face anteriorly ferruginous and punctate-striate, the vertex coarsely punctured; the face with a central channel which terminates at the anterior ocellus. Thorax oblong, rounded anteriorly and truncate posteriorly, the truncation transversely rugose; above coarsely punctured, the sides obliquely striated;

the legs and sides more or less ferruginous; wings subhyaline, the nervures fuscous. Abdomen oblong, with scattered punctures; the apex acute and rufo-testaceous.

Worker. Closely resembles the female, but is less coarsely punctured on the vertex, and the truncation of the metathorax is not rugose.

Hab. Australia.

This species is rather larger than *A. australis*, of a different colour, and more coarsely sculptured, but may very possibly be only a local variety of the Tasmanian species.

3. AMBLYOPONE FERRUGINEA.

B.M.

Worker. Length 2 lines.—Ferruginous: the head covered with a rugose punctate striation, the mandibles shorter and more bent than in *A. australis*; the prothorax striated, the stria obscurely punctured; the meso- and metathorax smooth and shining; the node of the peduncle transverse, rounded or subglobose; the abdomen oblong, widest towards the apex, which is acute.

Hab. Melbourne.

Genus 9. TYPHLOPONE.

Typhlopone, Westw. *Introd. Class. Ins.* ii. 219 (1840).

Labidus (Typhlopone), Shuck. *Ann. & Mag. Nat. Hist.* v. 326 (1840).

Cosmacetes, Spin. *Mem. Accad. Torino*, xiii. 70 (1853).

Head oblong, more or less emarginate behind, nearly as long as the thorax; eyes and ocelli obsolete in the workers. Antennæ subclavate, about the length of the head, 10-jointed; the scape nearly as long as the flagellum, and subclavate; mandibles curved, acute at their apex; the labial and maxillary palpi 2-jointed. Thorax oblong, much narrower than the head, a deep transverse suture separating the pro- and mesothorax; the legs stoutish, all the tibiæ with a calcar at their apex; the claws of the tarsi simple. Abdomen elongate-ovate; the node of the peduncle quadrate, of the same width as the base of the abdomen, which is truncate.

1. TYPHLOPONE FULVA.

B.M.

Typhlopone fulva, Westw. *Introd. Class. Ins.* ii. 219 (1840); *Ann. & Mag. Nat. Hist.* vi. 87 ♂ (1841).

Typhlopone Kirbii, Shuck. *Ann. & Mag. Nat. Hist.* v. 265 (1840).

Hab. West India Islands? (Found in sugar.)

2. TYPHLOPONE WESTWOODII.

Typhlopone Westwoodii, *Shuck. Ann. & Mag. Nat. Hist.* v. 266
♂ (1840).

Hab. South America.

3. TYPHLOPONE THWAITESII.

Typhlopone Thwaitesii, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 ♀
(1840).

Hab. Sugar-casks from South America.

4. TYPHLOPONE SPINOLÆ.

Typhlopone Spinolæ, *Shuck. Ann. & Mag. Nat. Hist.* v. 327 ♀
(1840).

Hab. Sugar-casks from South America.

5. TYPHLOPONE SHUCKARDI.

Typhlopone Shuckardi, *Westw. Ann. & Mag. Nat. Hist.* vi. 88 ♀
(1841).

Hab. West India Islands? (Found in sugar.)

6. TYPHLOPONE DAHLBOMII.

Typhlopone Dahlbomii, *Westw. Ann. & Mag. Nat. Hist.* vi. 88
(1841).

Hab. West India Islands? (Found in sugar.)

7. TYPHLOPONE HOMALINA.

Cosmacetes homalinus, *Spin. Mem. Accad. Torino*, xiii. 71 ♀.

Hab. Brazil (Para).

8. TYPHLOPONE SERRATULA.

Worker. Length $2-2\frac{1}{2}$ lines.—Chestnut-red: the head and thorax darker than the abdomen; the apical joint of the antennæ pale testaceous; head smooth and shining, the sides nearly parallel, slightly narrowed posteriorly; a slightly impressed line runs upwards from the insertion of the antennæ half-way towards the vertex, which is slightly emarginate behind, the edge of the emargination crossed by a few short striæ. Thorax flattened above, and with a number of elongate punctures or short striæ. Abdomen: the node of the peduncle flattened above, quadrate, and with a number of irregular depressions or punctures; the lateral margins slightly raised; the segments impunc-

tate, the apical one obliquely truncated, the lateral margins finely serrated; the abdomen sprinkled with pale fulvous hairs, most thickly so at the apex.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

9. *TYPHLOPONE ORANIENSIS.*

B.M.

Typhlopone oraniensis, *Lucas, Explo. Sc. d'Algér.* iii. 302. t. 16. f. 11 ♂.

Hab. Algeria.

10. *TYPHLOPONE PUNCTATA.*

B.M.

Worker. Length 2-3½ lines. — Chestnut-red, smooth and shining: the head and thorax punctured, the head most finely so, the abdomen delicately punctured. Head oblong, emarginate behind, the sides nearly parallel, slightly narrowed behind; the mandibles pitchy chestnut. Thorax convex above, the metathorax not channeled. Abdomen: the node of the petiole subquadrate, the first and second segments slightly constricted; the apex of the terminal segment abruptly truncated, with a minute spine on each side and one in the centre of the inferior margin.

Hab. Cape of Good Hope.

11. *TYPHLOPONE CURTISII.*

B.M.

Typhlopone curtisii, *Shuck. Ann. & Mag. Nat. Hist.* v. 265 (1840).

Hab. Ceylon.

12. *TYPHLOPONE LÆVIGATA.* Pl. VIII. fig. 4.

B.M.

Worker. Length 4 lines. — Chestnut-red, smooth and shining: head longitudinally channeled, slightly so in some examples; the inner margin and apex of the mandibles black. Thorax: a slightly impressed channel in front; the peduncle narrowed and rounded in front; the abdomen and legs rather paler than the head; the margins of the segments of the former slightly constricted.

Hab. Borneo (Sarawak).

Genus 10. *ANOMMA.*

Anomma, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 (1840).

Sphegomyrmex, *Imhoff, Bericht über die Verh. der Naturf. Gesellschaft. zu Basel*, x. (1852) p. 175.

Head widest in front; mandibles elongate, curved and forci-

pate, with a large curved tooth at about half their length within; the labial palpi 2-jointed; the maxillary palpi 2-jointed; the antennæ slender and 11-jointed. Thorax elongate, constricted in the middle; the legs slender and elongate. The node of the peduncle of the abdomen incrassate, elongate and narrow; the segments of the abdomen very slightly constricted.

The Ants belonging to this genus are those known as the 'Driver and Visiting-Ants of Africa.' An interesting account of their habits is published in the 'Transactions of the Entomological Society.' They are described as marching in vast armies, driving everything before them capable of muscular motion, so formidable are they from their numbers and bite: in respect to that fact they stand unique in their habits, and in distinction from other species. Their sallies are made in cloudy days and in the night, chiefly the latter: an exposure to the direct rays of the sun is almost immediately fatal. If they should be detained abroad till late in the morning, on a sunny day, by the quantity of their prey, they construct arches over their path; but should their way run under thick grass, &c., affording sufficient shelter, the arch is dispensed with. Whenever a stream of water intercepts their course in their excursions and migrations, if it should not be extensive, they compass it; but if otherwise, they make a line or chain of one another, gradually extending themselves by numbers across, till a connexion is formed with the opposite side, and thus a bridge is constructed, over which the main body passes in safety. The Drivers delight in rather low localities, generally the base of hills; consequently they are liable to be driven from their haunts during the rainy season, when the violent and continued rains, and the sudden swelling of rivers, cause the low grounds to be overflowed. In such an emergency, they throw themselves into a rounded mass, deposit their pupæ and eggs in the centre, and thus float upon the water till a place of safety is reached, or the flood subsides. Their entrance into a house is soon known by the simultaneous and universal movement of rats, mice, lizards, cockroaches, &c., and of the numerous vermin that infest dwellings, which renders their visits sometimes desirable. The mandibles of the Driver-Ant of the largest size are formidable, strongly hooked, having one tooth; those of the second size are flatter, sharper, and armed with strong teeth; the edges are finely serrated, and admirably calculated for lacerating and cutting muscular fibre. The inhabitants of the negro villages are frequently obliged to abandon their dwellings, taking with them their children, and wait until the ants have passed.

The males and females of *Anomma* are not known.

1. ANOMMA BURMEISTERI. Pl. VIII. fig. 2. B.M.

Anomma Burmeisteri, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 & (1840).

Westw. Ann. & Mag. Nat. Hist. vi. 88. pl. 11. f. 4 (1841).

Hab. Sierra Leone.

2. ANOMMA ARCENS. Pl. VIII. fig. 3. B.M.

Anomma arcens, *Westw. Trans. Ent. Soc.* v. 17. pl. 1. fig. 3 & (1847-49).

Hab. West Africa (Fish Town, near Cape Palmas); Old Calabar.

There is a very close resemblance between *A. arcens* and *A. Burmeisteri*; the distinctions are, that in the former the head is highly polished, perfectly smooth, entirely destitute of puncture or sculpture; in the latter the head is subopaque and covered with a very delicate reticulation; the lateral angles of the emargination of the head posteriorly are subacute in *A. arcens*; in the other species they are distinctly rounded.

Subfam. 1. MYRMICIDÆ.

Genus 1. MYRMICA.

Myrmica, *Latr. Gen. Crust. et Ins.* iv. 131.

The number of joints varying in the different divisions into which the genus is subdivided, the maxillary palpi from 6 to 1. the labial palpi from 4 to 2. Ocelli obsolete in the workers. Females and workers armed with stings; the petiole of the abdomen with two nodes. Pupæ usually naked, not enclosed in cocoons, but casting off a thin pellicle on arriving at the perfect condition or imago.

SUBDIVISION 1.

The maxillary palpi 6-jointed, the labial palpi 4-jointed. The anterior wings with the marginal and submarginal cells incomplete, and with one complete discoidal cell. The antennæ clavate. Sp. 1-8. (Pl. VIII. figs. 5-9.)

1. MYRMICA RUBIDA.

Formica rubida, *Latr. Hist. Nat. Fourm.* 267.

Schill. Bemerk. über die Schles. 56.

Myrmica rubida, *Mayr. Form. Austr.* 128. 1.

Nyl. Form. Fr. et d'Algér. 77.

Hab. France; Italy; Switzerland; Germany.

2. MYRMICA RUGINODIS.

B.M.

Myrmica ruginodis, Nyl. *Adno. Mon. Form. Bor. Eur.* 929. 2;
Addit. Adno. Mon. Form. Bor. Eur. 1052. 19; *Form. Fr. et d'Algér.* 79.

Foerst. Hym. Stud. Form. 66. 36.

Schenck, Besch. Nass. Ameis. 77.

Smith, Brit. Form. 116. 2.

Mayr. Form. Austr. 135. 4.

Myrmica vagans, *Curtis, Trans. Linn. Soc.* xxi. 213. 3.

Hab. Britain; France; Germany; Hungary; Finland.

This and the two following species were formerly included under the name of *M. rubra*. Dr. Nylander says the male is identical with the typical specimen of *M. vagans* in the Museum at Kiel, and that the female is the *M. rubra*, the male also standing as the male of *M. cæspitum*: this confusion is entirely avoided by adopting the names proposed by Nylander for the three closely allied, but very distinct species. This species would therefore, according to the laws of priority, be the *M. rubra* of Fabricius; but we cannot be certain that it would be so of Linnaeus, who would undoubtedly have included this and two or three of the following species under that name.

3. MYRMICA SCABRINODIS. Pl. VIII. figs. 6, 7, 9, 10, 11. B.M.

Myrmica scabrinodis, Nyl. *Adno. Mon. Form. Bor. Eur.* 930. 3;
Addit. Adno. Mon. Form. Bor. Eur. 1052. 20; *Form. Fr. et d'Algér.* 81. 6.

Foerst. Hym. Stud. Form. 67. 37.

Schenck, Besch. Nass. Ameis. p. 78.

Smith, Brit. Form. 115. 1.

Mayr. Form. Austr. 138. 6; *Ungar. Ameis.* 18. 2.

Myrmica cæspitum, *Zett. Ins. Lapp.* 450. 1.

Myrmica rubra, *Curtis, Trans. Linn. Soc.* xxi. 213. 1.

Hab. Britain; France; Germany; Hungary; Russia; Finland.

4. MYRMICA RUGULOSA.

B.M.

Myrmica rugulosa, Nyl. *Addit. alt. Adno. Mon. Form. Bor. Eur.* 32; *Form. Fr. et d'Algér.* 80. 5.

Mayr. Form. Austr. 133. 3.

Myrmica clandestina, *Foerst. Hym. Stud. Form.* 63. 34.

Schenck, Besch. Nass. Ameis. 84.

Hab. Britain; France; Germany; Switzerland; Finland.

5. *MYRMICA SULCINODIS*.

B.M.

Myrmica sulcinodis, Nyl. *Adno. Mon. Form. Bor. Eur.* 934;
Form. Fr. et d'Algér. 80. 5.

Smith, Brit. Form. 119. 4.

Mayr. Form. Austr. 136. 5.

Myrmica perelegans, Curtis, *Trans. Linn. Soc.* xxi. 214. 5.

Hab. Britain; France; Germany; Switzerland; Finland.

Typical specimens from Dr. Nylander and Mr. Curtis have been carefully compared, and, in our opinion, they are identical.

6. *MYRMICA LÆVINODIS*. Pl. VIII. fig. 8.

B.M.

Myrmica lævinodis, Nyl. *Adno. Mon. Form. Bor. Eur.* 1052. 18;

Addit. Adno. Mon. Form. Bor. Eur. 927. 1; *Form. Fr. et d'Algér.* 78. 2.

Foerst. Hym. Stud. Form. 64. 35.

Curtis, Trans. Linn. Soc. xxi. 213. 2.

Schenck, Besch. Nass. Ameis. 75.

Smith, Brit. Form. 118. 3.

Mayr. Form. Austr. 130. 2; *Ungar. Ameis.* 18. 1.

Hab. Britain; France; Germany; Hungary; Finland; Russia

7. *MYRMICA GRANULINODIS*.

Myrmica granulinosus, Nyl. *Addit. Adno. Mon. Form. Bor. Eur.* 1060.

Hab. Siberia.

8. *MYRMICA LOBICORNIS*. Pl. XII. fig. 12.

B.M.

Myrmica lobicornis, Nyl. *Adno. Mon. Form. Bor. Eur.* 932. 4;

Addit. Adno. Mon. Form. Bor. Eur. 1052. 21; *Addit. alt.* 31;
Form. Fr. et d'Algér. 82. 7.

Foerst. Hym. Stud. Form. 69.

Schenck, Besch. Nass. Ameis. 82.

Mayr. Form. Austr. 140. 7.

Myrmica denticornis, Curtis, *Trans. Linn. Soc.* xxi. 215. 7. t. 23.
 f. 18, 19.

Smith, Brit. Form. 120. 5.

Hab. Britain; France; Germany; Hungary; Italy; Finland.

We have compared specimens of this species from Dr. Nylander with others from Mr. Curtis, and they are certainly identical.

SUBDIVISION 2.

Species minute. The maxillary palpi 4-jointed; the labial

palpi 3-jointed. Antennæ clavate, the club 3-jointed. Sp. 9-13.

(Genus TETRAMORIUM, Mayr.)

9. MYRMICA CÆSPITUM: Pl. VIII. figs. 15, 16. B.M.

Formica cæspitum, Linn. *Faun. Suec.* no. 1726; *Syst. Nat.* i. 963. 11 ♂.

Latr. Hist. Nat. Fourm. 251. t. 10. f. 63.

Formica binodis, Linn. *Amæn. Acad.* vi. 413. 94; type in *Cab. Mus. Linn. Soc.*

Myrmica fuscula, Nyl. *Adno. Mon. Form. Bor. Eur.* 935. 6;

Addit. Mon. Form. 1053. 23; *Form. Fr. et d'Algér.* 86. 13.

Foerst. Hym. Stud. Form. 56. 29.

Schenck, Besch. Nass. Ameis. 86.

Myrmica impura, *Foerst. Hym. Stud. Form.* 48. 22 ♂.

Myrmica modesta, *Foerst. Hym. Stud. Form.* 49. 23 ♂.

Myrmica cæspitum, *Latr. Hist. Nat. Crust. et Ins.* xiii. 259.

Losana, Form. Piem. 327.

Curtis, Trans. Linn. Soc. xxi. 215. 8.

Smith, Brit. Form. 122.

Nyl. Form. Fr. et d'Algér. 86. 13.

Tetramorium cæspitum, *Mayr. Form. Austr.* 154. 2; *Ungar. Ameis.* 19. 1.

Hab. Britain; France; Germany; Hungary; Finland.

10. MYRMICA KOLLARI.

Myrmica Kollari, *Mayr. Besch. ein neuer Ameis.* 7.

Tetramorium Kollari, *Mayr. Form. Austr.* 153. 1.

Nyl. Form. Fr. et d'Algér. 87 (note).

Hab. Austria.

11. MYRMICA ATRATULA.

Myrmica atratula, *Schenck, Besch. Nass. Ameis.* 91.

Tetramorium atratulum, *Mayr. Form. Austr.* 157. 3; *Ungar. Ameis.* 20. 2.

Nyl. Form. Fr. et d'Algér. 87 (note).

Hab. Austria; Germany; Hungary.

12. MYRMICA ANGUSTULA.

Myrmica angustula, *Nyl. Form. Fr. et d'Algér.* 88. 14.

Hab. France.

13. MYRMICA LIPPULA.

B.M.

Myrmica lippula, *Nyl. Addit. alt. Form. Bor. Eur.* 41. 8.*Myrmica Minkii*, *Foerst. Hym. Stud. Form.* 63. 33.*Schenck, Besch. Nass. Ameis.* 142.*Mayr. Form. Austr.* 143.*Hab.* Britain; France; Germany; Austria; Finland.

SUBDIVISION 3.

Species minute. Maxillary palpi 5-jointed; labial palpi 3-jointed. Antennæ clavate, club 3-jointed.—Sp. 14–30. (Pl. VIII. figs. 16 a, 17, 18, 19.)

(Genus LEPTOTHORAX, *Mayr.*)

14. MYRMICA ACERVORUM.

B.M.

Formica acervorum, *Fabr. Ent. Syst.* ii. 358. 38; *Syst. Pic.* 407. 50.*Myrmica acervorum*, *Zett. Ins. Lapp.* 451.*Nyl. Adno. Mon. Form. Bor. Eur.* 936. 7; *Addit. Mon.**Form.* 1057; *Form. Fr. et d'Algér.* 89. 16.*Foerst. Hym. Stud. Form.* 61. 32.*Schenck, Besch. Nass. Ameis.* p. 97.*Smith, Brit. Form.* 124. 8.*Leptothorax acervorum*, *Mayr. Form. Austr.* 164. 1.*Myrmica lacteipennis*, *Zett. Ins. Lapp.* 452. 5 ♂.*Myrmica graminicola*, *Latr. Hist. Nat. Fourm.* 255. ♀ (var.).*Hab.* Britain; France; Germany; Austria; Finland.

15. MYRMICA CLYPEATA.

Leptothorax clypeatus, *Mayr. Form. Austr.* 164. 1.*Nyl. Form. Fr. et d'Algér.* 90 (note).*Hab.* Austria.

16. MYRMICA GREDLERI.

Leptothorax Gredleri, *Mayr. Form. Austr.* 166. 1.*Nyl. Form. Fr. et d'Algér.* 90 (note).*Hab.* Austria.

17. MYRMICA MUSCORUM.

B.M.

Myrmica muscorum, *Nyl. Addit. Mon. Form. Bor. Eur.* 1054;*Form. Fr. et d'Algér.* 90.*Leptothorax muscorum*, *Mayr. Form. Austr.* 167. 4.*Hab.* France; Germany; Austria; Finland.

MYRMICA TUBERUM.

nica tuborum, *Fabr. Syst. Ent.* 393. 15; *Ent. Syst.* ii. 358.
3; *Syst. Piez.* 407. 47.

nica tuborum, *St. Farg. Hym.* i. 183. 3 ?

Zett. Ins. Lapp. 452. 4.

Nyl. Adno. Mon. Form. Bor. Eur. 939; *Addit. Adno. Mon.*

Form. 1057; *Form. Fr. et d'Algér.* 91. 17.

. France.

MYRMICA TUBEROSA.

nica tuberosa, *Latr. Hist. Nat. Fourm.* 259.

nica tuborum, *St. Farg. Hym.* i. 183. 3.

. France.

MYRMICA NIGRICEPS.

tothorax nigriceps, *Mayr. Form. Austr.* 169. 6.

Nyl. Form. Fr. et d'Algér. 92 (note).

. Austria.

MYRMICA CORTICALIS.

tothorax corticalis, *Schenck, Besch. Nass. Ameis.* p. 100.

Mayr. Form. Austr. 168. 5.

Nyl. Form. Fr. et d'Algér. 93 (note).

. Austria; Tyrol; Nassau.

MYRMICA AFFINIS.

tothorax affinis, *Mayr. Form. Austr.* 170. 7.

Nyl. Form. Fr. et d'Algér. 94 (note).

. Austria.

MYRMICA DILUTA.

nica diluta, *Nyl. Addit. alt. Adno. Mon. Form. Bor. Eur.*
 l. 9.

. South Russia.

MYRMICA SIMILLIMA.

nica simillima, *Nyl. Form. Fr. et d'Algér.* 94.

Smith, Brit. Hym. 118.

tothorax affinis, *Mayr. Form. Austr.* 170. 7 ?

(See *Nyl. Form. Fr. et d'Algér.* 94, note.)

b. Britain; Austria.

25. MYRMICA UNIFASCIATA.

Formica unifasciata, Latr. *Hist. Nat. Fourm.* 257.

Myrmica unifasciata, Losana, *Form. Piem.* 332.

Nyl. Addit. alt. 44; *Form. Fr. et d'Algér.* 92. 18.

Schenck, Besch. Nass. Ameis. 101.

Leptothorax unifasciata, Mayr. *Form. Austr.* 172. 9; *Unger. Ameis.* 21. 2.

Hab. France; Germany; Austria; Russia.

The *M. unifasciata* of Nylander is certainly not the *unifasciata* of Smith's Essay, nor have we seen it in any British collection; all the English examples have the antennæ pale red, and the fascia on the abdomen extends to, or frequently beyond, the second segment. Latreille may have confounded the two species but he has not mentioned the dark club of the antennæ, a conspicuous character; the width of the band on the abdomen varies in different specimens, so that it would rather appear that Latreille was describing Schenck's insect, *M. cingulata*; but we think it best to adopt the nomenclature of Nylander and others.

26. MYRMICA NYLANDERI.

B.M

Myrmica Nylanderi, Foerst. *Hym. Stud. Form.* 53.

Myrmica cingulata, Schenck, *Besch. Nass. Ameis.* 104.

Nyl. Form. Fr. et d'Algér. 93. 20.

Leptothorax Nylanderi, Mayr. *Form. Austr.* 175. 11.

Myrmica parvula, Schenck, *Besch. Nass. Ameis.* 103. 140.

Leptothorax parvulus, Mayr. *Form. Austr.* 176. 12.

Stenamma albipennis, Curtis, *Trans. Linn. Soc.* xxi. 218.

Myrmica unifasciata, Smith, *Brit. Form.* 128. 11.

Curtis, Trans. Linn. Soc. xxi. 216. 12.

Hab. Britain; France; Germany; Austria.

27. MYRMICA SIMPLICIUSCULA.

Myrmica simpliciuscula, *Nyl. Form. Fr. et d'Algér.* 92. 19.

Hab. France.

28. MYRMICA INTERRUPTA.

Myrmica interrupta, Schenck, *Besch. Nass. Ameis.* 106. 140.

Leptothorax interruptus, Mayr. *Form. Austr.* 174. 10.

Hab. Austria.

29. MYRMICA RECEDENS.

Myrmica recedens, *Nyl. Form. Fr. et d'Algér.* 94. 21.

Hab. France.

30. MYRMICA LÆVIGATA.

Myrmica lævigata, *Smith, Brit. Form.* 130. 13.

Nyl. Form. Fr. et d'Algér. 94.

Hab. Britain. France?

SUBDIVISION 4.

Species minute. Maxillary palpi 4-jointed, labial palpi 3-jointed; mandibles dentate; club of the antennæ 3-jointed; body smooth and shining.—Sp. 31.

(Genus FORMICOXENUS, *Mayr.*)

31. MYRMICA NITIDULA. Pl. VIII. figs. 13, 14. B.M.

Myrmica nitidula, *Nyl. Addit. Adno. Mon. Form. Bor. Eur.* 1058;
Addit. Alt. 34; *Form. Fr. et d'Algér.* 94. 22 ♂ ♀.

Foerst. Hym. Stud. Form. 55.

Myrmica læviuscula, *Foerst. Hym. Stud. Form.* 54. 73.

Myrmica debilis, *Foerst. Hym. Stud. Form.* 52.

Stenamma Westwoodii, *Steph. Westw. Intr. Class. Ins.* ii. 226.
t. 86. f. 11 ♂.

Formicoxenus nitidulus, *Mayr. Form. Austr.* 146. 1.

Hab. Britain; France; Germany; Finland.

SUBDIVISION 5.

Maxillary palpi 5-jointed, labial palpi 3-jointed; mandibles with their apex truncate and not toothed; antennæ 11-jointed, the club 4-jointed.—Sp. 32, 33.

32. MYRMICA SUBLÆVIS. Pl. VIII. figs. 20–24.

Myrmica sublævis, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 33; *Form. Fr. et d'Algér.* 95. 23.

Hab. France; Finland; Lapland.

33. MYRMICA HIRTULA. B.M.

Myrmica hirtula, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 45;
Form. Fr. et d'Algér. 96 (note).

Hab. Finland (Helsingfors).

SUBDIVISION 6.

Species minute. Maxillary palpi 2-jointed, labial palpi 2-jointed; antennæ of female and worker 10-jointed, the club composed

of two joints ; anterior wings with one marginal cell, not closed at the apex, one submarginal cell and one discoidal cell.—Sp. 34, 35.

(Genus DIPLORHOPTRUM, Mayr.)

34. MYRMICA FUGAX. Pl. VIII. figs. 25–28. B.M.

Formica fugax, Latr. *Hist. Nat. Fourm.* 265.

Schill. Bermerk. üb. die in Schles. &c. 56.

Myrmica fugax, St. *Farg. Hym.* i. 184.

Schenck, Besch. Nass. Ameis. 107.

Smith, Brit. Form. 127. 10.

Myrmica flavidula, Nyl. *Addit. Alt. Adno. Mon. Form. Bor. Eur.*

33; *Form. Fr. et d'Algér.* 99. 27.

Diplorhoptrum fugax, Mayr. *Form. Austr.* 178. 1; *Ungar. Ameis.* 21. 1.

Hab. Europe.

35. MYRMICA MOLESTA. B.M.

Myrmica molesta, Say, *Bost. Journ. Nat. Hist.* i. 293. 6 (1834).

Myrmica domestica, Shuck. *Mag. Nat. Hist.* 628 (1838).

Daniells, Proc. Linn. Soc. ii. 172.

Smith, Brit. Form. 131.

Curtis, Trans. Linn. Soc. xxi. 217. 13.

Nyl. Form. Fr. et d'Algér. 98. 26.

Hab. Britain ; France ; Brazil (Rio) ; N. America.

This species has been admitted into the lists of British Ants, but is undoubtedly an importation. The Rev. Hamlet Clark met with a small ant at Rio Janeiro, which he described as being very annoying : it was found everywhere, in-doors and out-of-doors, and upon everything ; Mr. Clark brought a number of these to England, which have been carefully examined, and named provisionally *Myrmica intrudens* : this species is undoubtedly *M. molesta*, which has been introduced in merchandise. In this country it appears to be found in houses alone, and in some places has proved very annoying, rendering some of them uninhabitable : such was the case at Kemp Town, Brighton ; and many houses in the vicinity of the British Museum swarm with them : in one of these all the sexes were procured from a nest under the kitchen hearth-stone ; on turning up the latter it was found to cover a moving mass of ants, which filled the entire space occupied by the stone ; countless numbers were destroyed by pouring boiling water on the colony, the females were by this means destroyed, and the pest got rid of. The female is of the same

colour as the workers, yellow with the apical portion of the abdomen dusky or black, the thorax being elongate-ovate, not narrowed behind; the male is a minute black insect with colourless wings, the neuration being scarcely perceptible.

The *Myrmica molesta* of Say, I consider identical with our insect, specimens from the United States having been carefully compared; it is described as being equally abundant and annoying in houses in that country, and is probably now of almost universal occurrence, like other insects which attach themselves to the habitations of man: South America is its native country.

SUBDIVISION 7.

Maxillary palpi 2-jointed, labial palpi 2-jointed.—Sp. 36.

(Genus *MONOMARIUM*, Mayr.)

36. MYRMICA MINUTA.

Monomarium minutum, Mayr. *Form. Austr.* 180. 7.

Hab. Lombardy.

Species of India; Singapore; Ceylon; Malacca; Borneo.—Sp. 37–48.

37. MYRMICA VASTATOR.

B.M.

Worker. Length $\frac{3}{4}$ –1 line.—Pale ferruginous: the abdomen black, with about one-third at the base pale, entirely smooth and shining; the head wider than the thorax or abdomen, oblong, slightly emarginate behind; the eyes minute, the club of the antennæ three-jointed. Thorax deeply strangulated in the middle, the metathorax without spines. Abdomen ovate, truncate at the base, entirely destitute of pubescence.

Hab. India. (Coll. Major-General Hardwick.)

A number of these ants were found in the cocoon of an Indian moth.

38. MYRMICA HUMILIS.

Female. Length $1\frac{1}{4}$ line.—Head, antennæ, thorax, legs, and nodes of the abdomen, reddish-yellow and subopaque; the eyes and abdomen black; wings hyaline and brilliantly iridescent; the first node of the peduncle clavate, the second much wider than the first and globose, the metathorax armed with two short acute spines.

Hab. India (Bombay). (Coll. East India House.)

39. *MYRMICA RUGIFRONS*.

Female. Length 3 lines.—Pale reddish-yellow; the first segment of the abdomen, except its extreme base, fuscous. Head elongate-quadrate, the anterior and posterior angles rounded; the eyes, ocelli, and inner margin of the mandibles, black, the latter denticulate; the head rugose, with a number of longitudinal fine carinæ, the hinder margin of the vertex emarginate. Thorax elongate-ovate, longitudinally rugose above, the prothorax transversely so, the metathorax concavely truncate at the apex, a short spine on each side at the verge of the truncation; the legs rather paler than the body; wings hyaline and iridescent, the nervures pale testaceous. Abdomen ovate, smooth and shining; the first node petiolated at the base, the second globose.

Hab. India (Penang). (Coll. East India House.)

40. *MYRMICA BIDENTATA*.

Worker. Length $1\frac{1}{2}$ line.—Pale rufous; the abdomen rufopiceous, with base and apex pale. Head oblong, very smooth and shining; the eyes small, placed rather forward at the sides of the head; the clypeus produced, concave above, the lateral angles with a stout acute tooth; the mandibles stout, and having three acute teeth at their apex. Thorax oblong, with a deep strangulation between the meso- and metathorax, the metathorax with a minute tubercle on each side, not toothed; the first node of the peduncle clavate, the second globose.

Hab. Calcutta. (Coll. East India House.)

This species is readily distinguished by its bidentate clypeus.

41. *MYRMICA PELLUCIDA*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Head and thorax dark fusco-testaceous, antennæ and legs much paler, nearly white; the thorax with its divisions distinctly marked, that between the meso- and metathorax most strongly impressed, the metathorax without spines. Abdomen of a clear, pale, semi-transparent colour.

Hab. Singapore. (Coll. A. R. Wallace.)

“House-Ant, very active, but not destructive.”—*Wallace*.

42. *MYRMICA FRAGILIS*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Pale flavo-testaceous, smooth and shining. Head oblong-quadrate, eyes very small, placed forward on the sides of the head; antennæ clavate, the club

3-jointed; the thorax with a deep strangulation between the meso- and metathorax, the latter without spines; the abdomen fuscous at its apex.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

“House-Ant, very destructive.”—*Wallace*.

43. *MYRMICA BASALIS*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Pale testaceous, with the club of the antennæ and the abdomen, except its base, dark fuscous, and very smooth and shining; the head ovate, slightly emarginate behind; eyes small, placed forward on the sides of the head; the metathorax obliquely truncate, smooth and without spines. Abdomen ovate, truncate at the base.

Hab. Ceylon.

44. *MYRMICA CONTIGUA*.

B.M.

Female. Length 2 lines.—Pale ferruginous: head and thorax opake, the abdomen black and shining, with the first segment and base of the second pale ferruginous; the eyes black. Thorax oblong-ovate, with a central abbreviated carina in front; a dark stain runs from the origin of the wings, passing beneath the post-scutellum; the metathorax unarmed, obliquely truncated, the truncation concave; the apical margins of the second and following segments of the abdomen testaceous.

Hab. Ceylon.

This is probably the female of *M. basalis*, but as they were not received together, it is uncertain.

45. *MYRMICA GLYCIPHILA*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Testaceous, with the abdomen, except its base, fuscous; the head and thorax subopake, the abdomen shining; the flagellum 11-jointed, clavate; the thorax narrowed posteriorly, divided a little beyond the middle by a distinct suture, the metathorax not spined; the first node of the peduncle conical, elevated above the second, which is nearly globose; the abdomen truncate at the base and having a few long pale hairs at the apex.

Hab. Ceylon.

46. *MYRMICA AGILIS*.

Worker. Length 1 line.—Head and thorax pale ferruginous; abdomen black, with the base pale, very smooth and shining;

the flagellum clavate, the club 3-jointed, the basal joint of the flagellum as long as the three following; the metathorax with two minute spines. Abdomen ovate, the first node of the peduncle elongate, the second subglobose.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

47. *MYRMICA TRACHYLISSE*.

B.M.

Female. Length 3 lines.—Ferruginous: the head and thorax coarsely rugose, longitudinally grooved, the grooves with deep, large punctures; the head very large, larger than the thorax, the latter nearly globose; the verge of the truncation of the metathorax widely emarginate, the lateral angles produced, forming acute teeth. Abdomen very smooth and shining, the nodes of the peduncle smooth, shining and subglobose.

Hab. Borneo. (Coll. A. R. Wallace.)

48. *MYRMICA LONGIPES*.

Worker. Length $2\frac{1}{2}$ lines.—Dark brown: head much wider than the thorax, narrowed behind the eyes and prolonged into a short neck; antennæ longer than the body and very slender; the scape and also the flagellum slightly thickened towards their apex. Head much wider than the thorax, the mandibles rufo-testaceous. Thorax: the prothorax elongate, prolonged into a neck, the meso- and metathorax divided by a deep stragulation, the metathorax with two minute upright spines. Abdomen ovate; the peduncle elongate, formed of two nodes, the first smaller than the second and less elevated, both having a short footstalk.

Hab. Borneo; Singapore. (Coll. W. W. Saunders, Esq.)

Species of Syria, Madeira, Cape of Good Hope, Port Natal, and Australia.—Sp. 49–55.

49. *MYRMICA VENUSTA*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Head, antennæ, thorax, legs, and petiole of the abdomen, ferruginous; abdomen black, smooth and shining. Head oblong, very slightly emarginate behind; eyes and tips of the mandibles black. Thorax slightly narrowed behind, the division distinctly marked between the meso- and metathorax, the latter not spined. Abdomen ovate, truncated at the base.

Hab. Syria.

50. *MYRMICA CARBONARIA*.

B.M.

Worker. Length 1 line.—Coal-black, smooth and shining: the antennæ and legs dark rufo-fuscous, scarcely black; the basal joints of the flagellum, the articulations of the legs and the tarsi, pale rufo-testaceous, the claw-joint of the tarsi darkest. Thorax about the same length as the head, with a deep strangulation between the meso- and metathorax, the latter truncate behind, not spined. Abdomen ovate, truncate at the base, pointed at the apex, the nodes elevated and rounded above.

Female. Length 2 lines.—Of the same colour as the worker, differing only in the sexual characteristics of length of thorax and abdomen.

Male. Length 2 lines.—Head and thorax opaque black, the legs and abdomen shining; the clypeus, scutellum, and verge of the truncation of the metathorax, shining; wings colourless and iridescent, the costal nervure and stigma testaceous; abdomen oblong-ovate; the nodes of the petiole transverse, their upper margin subemarginate.

Hab. Madeira. (Coll. T. V. Wollaston, Esq.)

51. *MYRMICA SUBOPACA*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Head, thorax, legs, and nodes of the petiole, dull rufo-testaceous; abdomen shining black, varying in depth of colour, small workers being sometimes pale red with the thorax black. The articulations of the legs and the tarsi pale rufo-testaceous, the head before the insertion of the antennæ and mandibles pale ferruginous; the metathorax with a longitudinal groove, not spined; the head and thorax smooth; the nodes of the petiole elevated, blunt above; abdomen ovate, truncate at the base, pointed at the apex.

Female. Length $2\frac{1}{4}$ lines.—Opaque fusco-ferruginous; abdomen black, with the base reddish, the articulations of the legs and the tarsi pale rufo-testaceous; the thorax in the middle in front, and the scutellum, of a brighter red; the metathorax with a deep excavation; abdomen oblong-ovate, thinly sprinkled with short pale glittering hairs.

Hab. Madeira. (Coll. T. V. Wollaston, Esq.) Cape.

52. *MYRMICA IRRITANS*.

B.M.

Worker. Length 1 line.—Pale rufo-testaceous: the head, excepting its mandibles and antennæ, the abdomen, excepting its base, being more or less rufo-fuscous; the femora and tibiæ in the middle are also darker than the other parts of the legs. Head wider than the thorax or abdomen, very smooth and shining;

eyes black and rather prominent. Thorax shining, deeply strangled in the middle, the metathorax with two short erect acute spines. Abdomen ovate, very smooth and shining, with the base truncated.

Hab. Port Natal.

53. *MYRMICA LONGICEPS*.

B.M.

Worker. Length 2 lines.—Dark rufo-piceous: the legs elongate and pale rufo-testaceous. Head oblong-ovate, the mandibles large, produced forwards in a line with the sides of the head; the face striated on each side before the eyes, the clypeus and vertex smooth and shining, the antennæ and legs long, slender, and pubescent. Thorax smooth and shining in front, deeply strangled in the middle, the metathorax with two bent acute spines. The nodes of the peduncle and the abdomen, smooth, shining, and thinly sprinkled with long pale erect hairs.

Hab. Melbourne.

54. *MYRMICA ADELAIDÆ*.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Head, thorax, and nodes of the abdomen bright red; abdomen black, legs dark rufo-piceous. Head and thorax coarsely longitudinally striated, the striae strongly punctured; the teeth of the mandibles black, the club of the antennæ 3-jointed, the flagellum 10-jointed. The femora incrassate in the middle, very slender at their base and apex, the articulations of the legs and the tarsi pale rufo-testaceous; the metathorax not spined. Abdomen ovate, covered with a very fine silky pile, and with a large ovate cream-coloured spot on each side at the base.

Hab. Adelaide.

Of this very conspicuous and beautiful species I have only seen the single specimen described: in the form of the thorax it differs from the majority of species, being somewhat flattened above, the margins raised and crenulated, the anterior margin rounded in the middle and curving on each side, forming a lateral, sharp, angular tooth; the division between the meso- and metathorax is very distinctly impressed.

55. *MYRMICA FORMOSA*.

Worker. Length 3 lines.—Black: the mandibles, antennæ, thorax, legs, and first node of the petiole, blood-red, the mandibles palest, and the scape and apex of the flagellum above, more or less fuscous. The head longitudinally striated, the prothorax with very coarse striae diverging on each side from the centre; the

mesothorax longitudinally striated, the metathorax coarsely rugose, with the oblique apical portion transversely striated; the first node coarsely rugose, the second and the abdomen smooth and shining.

Tab. Adelaide. (Coll. F. Smith.)

Species of North America, Georgia, and California.—Sp. 56–66.

6. MYRMICA OPPOSITA.

Myrmica opposita, Say, *Bost. Journ. Nat. Hist.* i. 292. 3.

Tab. North America.

7. MYRMICA CORRUGATA.

Myrmica corrugata, Say, *Bost. Journ. Nat. Hist.* i. 291. 2 ♀ ♂.

Tab. North America (Indiana).

8. MYRMICA LINEOLATA.

Myrmica lineolata, Say, *Bost. Journ. Nat. Hist.* i. 290. 1.

Tab. United States.

9. MYRMICA INFLECTA.

Myrmica inflecta, Say, *Bost. Journ. Nat. Hist.* i. 292. 4 ♂.

Tab. North America (Indiana).

10. MYRMICA DIMIDIATA.

Myrmica dimidiata, Say, *Bost. Journ. Nat. Hist.* i. 293. 5.

Tab. North America.

1. MYRMICA MINUTA.

Myrmica minuta, Say, *Bost. Journ. Nat. Hist.* i. 294. 7.

Tab. North America (Indiana).

2. MYRMICA TRANSVERSA.

B.M.

Worker. Length 3 lines.—Bright rufo-ferruginous: head large, subquadrate, wider than the thorax or abdomen. Head finely striated, with some coarser striæ before the eyes, slightly marginate behind; the eyes, inner margins of the mandibles and the teeth, black. The prothorax longitudinally striated, the meso- and metathorax transversely so, the latter without spines; the legs sprinkled with pale glittering hairs. Abdomen very smooth and shining, the first node oblong, the second narrowed to the base.

Tab. North America.

63. *MYRMICA BREVIPENNIS*.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Head and thorax black; antennæ, mandibles, legs, abdomen and second node of the petiole, ferruginous, the femora slightly dusky; wings fulvo-hyaline, shorter than the abdomen, with the nervures pale rufo-testaceous. Head and thorax with a fine longitudinal striation, and thinly clothed with long pale pubescence; the legs and abdomen pubescent. Head narrowed behind, and slightly emarginate; the sutures of the scutellum and post-scutellum ferruginous.

Hab. Georgia.

64. *MYRMICA BARBATA*.

Female. Length $5\frac{1}{2}$ lines.—Ferruginous: the head finely striated longitudinally, smooth and shining beneath; the cheeks with a long beard of pale ferruginous hairs; mandibles very stout, strongly striated, their inner edge with a row of acute teeth, and a longer acute one at the apex. Thorax ovate, pubescent, the metathorax armed with two stout spines, and transversely striated; the wings hyaline, with a yellowish tinge towards their base, the nervures ferruginous, the stigma fuscous; the legs covered with short pale pubescence. Abdomen: the first node of the petiole roughened, the second transverse and smooth, the petiole with a tooth at its base beneath; the abdomen ovate, and, as well as the nodes, thinly sprinkled with pale pubescence.

Hab. Mexico. (Coll. F. Smith.)

65. *MYRMICA BICARINATA*.

Myrmica bicarinata, *Nyl. Addit. Adno. Mon. Form. Bor. Es* 1061.

Hab. California.

66. *MYRMICA MOLESTA*.

B.M.

Myrmica molesta, *Say, Bost. Journ. Nat. Hist.* i. 293. 6 (1834).
Myrmica domestica, *Shuck. Mag. Nat. Hist.* 628 (1838).

Hab. North America.

For the synonyma of this species see the section of European species.

Species of Brazil and South America.—Sp. 67-75.67. *MYRMICA LUNDII*.

Myrmica Lundii, Guér. *Voy. Coq. Zool.* ii. 206 ♀.

Hab. Brazil.

68. *MYRMICA GLOBULARIA*.

Worker. Length 1 line.—Pale rufo-testaceous, very smooth and shining, with a rufo-fuscous band on the first segment of the abdomen, the basal and apical margins pale. Head rather wider than the thorax or abdomen, the thorax strangled in the middle, the metathorax without spines. The first node of the petiole compressed, its upper margin rounded; the second node large and globular, much larger than is usual in the genus.

Female. Length $1\frac{3}{4}$ line.—Rather darker red than the worker the thorax oblong-ovate; the wings hyaline and beautifully iridescent; the nodes of the petiole of the same relative proportion as in the workers; abdomen oblong-ovate, rufo-fuscous, with the base and the apical margins of the segments pale rufo-testaceous.

Male. Length $1\frac{1}{2}$ line.—Jet-black, with the antennæ and legs pale testaceous; wings clear hyaline and beautifully iridescent.

Hab. Brazil. (Coll. F. Smith.)

69. *MYRMICA CASTANEA*.

B.M.

Female. Length 3 lines.—Chestnut-red: head and thorax longitudinally striated, the scutellum smooth with a few punctures; the metathorax with two short spines, between which it is transversely striated; mandibles smooth and shining, with two stout teeth at the apex, and a few striæ at their outer margins. Abdomen smooth and shining, with the apical margins of the segments dusky.

Hab. Brazil (Ega).

70. *MYRMICA BLANDA*.

B.M.

Worker. Length 1 line.—Head and thorax ferruginous; abdomen black or brownish-black, with the apex rufo-testaceous. The head, thorax, and nodes of the abdomen finely rugose: the roughness is occasioned by the excessive closeness of the punctures; the club of the antennæ 3-jointed; the legs rather paler than the thorax; the thorax convex and rounded in front, narrowed posteriorly, with two acute spines on the metathorax. The abdomen very smooth and shining.

Hab. Brazil (Ega).

71. *MYRMICA VIRULENS*.

B.M.

Worker. Length 2 lines.—Pale reddish-yellow, very smooth and shining, and thinly sprinkled with erect pale hairs: the club 2-jointed; the vertex faintly depressed in the middle. Thorax deeply strangled in the middle, the prothorax depressed in the middle. Abdomen: the first node incrassate, rounded above, less elevated and smaller than the second, subglobose.

Hab. Brazil (Ega).

This species is allied to *M. savissima*. Mr. Bates says, "It is found only in the forest: its formicarium is in the earth, under vegetable debris. Its sting is still more painful than that of *M. savissima*."

72. *MYRMICA TRISTIS*.

B.M.

Worker. Length $1\frac{1}{2}$ line.—Reddish-brown, opaque: the eyes small, black and prominent; the flagellum slightly fuscous with the tip pale, the club 3-jointed. Thorax much narrower than the head, deeply strangled in the middle; the metathorax with two short upright spines; the tibiae and femora slightly dusky in the middle. Abdomen small and ovate; the first node of the petiole conical, the second globose.

Hab. Rio Janeiro (Tejuca). (Coll. Rev. Hamlet Clark.)

73. *MYRMICA LYNCEA*.

Myrmica lyncea, *Spin. Faun. Chili*, vi. 241. 1 ♂.

Hab. Chili.

74. *MYRMICA GAYI*.

Myrmica Gayi, *Spin. Faun. Chili*, vi. 242. 2 ♂.

Hab. Chili.

75. *MYRMICA RUSSULA*.

Myrmica russula, *Nyland. Form. Fr. et d'Algér.* 82.

Hab. St. Domingo. (Coll. Dr. Sichel, Paris.)

Genus 2. MYRMECINA.

Myrmecina, *Curtis, Brit. Ent.* vi. fol. 226.

Myrmica, pt., *Nyland. Addit. Alt. Adno. Mon. Form. Bor. Es* 40.

Antennæ 12-jointed in the female, the club consisting of 3 joints. Maxillary palpi 4-jointed; labial palpi 3-jointed. An-

erior wings with one complete marginal cell, and one submarginal, the discoidal cells obsolete. The metathorax spined in the female and worker. The clypeus bidentate.

. MYRMECINA LATREILLII. Pl. IX. figs. 8-12. B.M.

Myrmecina Latreillii, *Curtis, Brit. Ent.* vi. 265 ♂; *Trans. Linn. Soc.* xxi. 218. t. 23. f. 22 ♀.

Smith, Brit. Form. 132. 1.

Mayr. Form. Austr. 149. 1; *Ungar. Ameis.* 18. 1.

Myrmica striatula, *Nyl. Addit. Alt. Mon. Form. Bor. Eur.* 40. 7; *Form. Fr. et d'Algér.* 96. 24.

Myrmica bidens, *Foerst. Hym. Stud. Form.* 50. 24.

Schenck, Besch. Nass. Ameis. 94.

Myrmica graminicola, *Foerst. Hym. Stud. Form.* 58. 30.

Hab. Europe.

. MYRMECINA PILICORNIS.

Male. Length $1\frac{1}{2}$ line.—Pale rufo-testaceous, smooth and shining: the antennæ and legs white; the head with a dusky spot on the vertex, enclosing the ocelli, which are placed in a curve, the posterior pair on the extreme margin of the vertex; eyes large, placed anteriorly on the sides of the head, which is widest in front; the antennæ tapering to the apex, very pubescent. Thorax: the wings milky-white, their margins fringed with pubescence. The abdomen more or less fuscous.

Hab. India (Bombay). (Coll. East India House.)

. MYRMECINA GRATIOSA.

B.M.

Worker. Length 4 lines.—Head, thorax, legs, and nodes of the petiole, ferruginous; abdomen smooth, shining black. Head large, wider than the thorax or abdomen, longitudinally striated, the striae stronger and more deeply impressed on the anterior portion of the face; the mandibles triangular, striated, and armed with strong black teeth on their inner margin. Thorax: its margins raised, the lateral angles of the anterior margin produced and acute; the disk longitudinally striated, with a deep strangulation between the meso- and metathorax, the latter coarsely rugose, and having on each side a short blunt tooth; the sides of the mesothorax have also a sharp angle or tooth at their margins at the verge of the strangulation, before which the sides are rounded; the femora very much thickened in the middle and much attenuated at their base and apex, the tibiae slightly incrassate; the legs very smooth and shining with the tarsi deep

ferruginous. Abdomen ovate, narrowed at the base, which is slightly rufous; the nodes of the petiole rugose, the first elongated, the second subglobose; the first node is produced in the middle above into a short acute spine, and it has also a spine at its base beneath.

Female. Length $6\frac{1}{4}$ lines.—Of the same colour as the worker: the head rather more elongate-quadrate; the thorax elongate-ovate, sculptured as in the worker; wings subhyaline, the nervures pale rufo-testaceous, the stigma fuscous; the femora swollen as in the worker; the basal node is raised in the middle to a sharp transversely rounded edge, not spined; beneath, at its base, is a flattened acute tooth: otherwise like the worker.

Hab. Australia (Adelaide).

This fine species is placed provisionally in the genus *Myrmecina* a dissection of the parts of the mouth would determine that question; it is however closely allied to that genus, if not belonging to it; the neururation of the wings only differs in their anterior pair having the cubital vein and also the subdiscoidal vein continued to the apical margin of the wing.

Genus 3. STRONGYLOGNATHUS.

Eciton, Schenck, *Beschr. Nass. Ameis.* 117 (1852).

Myrmus, Schenck, *Ent. Zeit.* 299 (1853).

Strongylognathus, Mayr. *Form. Austr.* 159 (1855).

Maxillary palpi 4-jointed, labial palpi 3-jointed. Anterior wing with one incomplete marginal cell, one submarginal and one discoidal cell. Mandibles narrow, arcuate, smooth, and with the apex acute. Antennæ of worker 12-jointed, the club consisting of 3 joints.

1. STRONGYLOGNATHUS TESTACEUS.

Eciton? testaceus, Schenck, *Beschr. Nass. Ameis.* 117.

Myrmus emarginatus, Schenck, *Ent. Zeit.* 299.

Strongylognathus testaceus, Mayr. *Form. Austr.* 158; *Unger Ameis.* 20. 1.

Nyl. Form. Fr. et d'Algér. 101. 1.

Hab. Europe; France; Austria.

Genus 4. CREMATOGASTER.

Formica, pt., *Oliv. Encycl. Méth.* vi. 497 (1791).

Myrmica, pt., *Latr. Hist. Nat. Fourm.* 261 (1804).

Crematogaster, *Lund, Ann. Sc. Nat.* xxvii. (1831).

Acrocœlia, *Mayr. Ein. neue Ameis.* 143 (1852).

Maxillary palpi 5-jointed, labial palpi 3-jointed. Antennæ 11-jointed, the club 3-jointed. Anterior wings with one marginal cell, incomplete; one complete submarginal, and one discoidal cell. Abdomen cordate, the petiole attached to the upper surface of its base.

The insects belonging to this genus of Ants construct their nests on the branches of trees, suspending them in the same way as Wasps, to the nests of which they have a close resemblance; on removing the outer covering, however, they exhibit a very different construction, being composed of multitudinous, curved, intricate ramifications, all leading to the interior chambers and galleries. From the close resemblance which the nests have to a wig, they have probably acquired the popular name of the Negro-head, by which they are generally known in the Brazils. The insects are readily known in consequence of the abdomen being usually heart-shaped, and the peduncle by which it is attached to the thorax being inserted at the top of the basal segment, instead of beneath, as it is in all the other genera of Ants. These insects are described by observers as having a remarkable appearance when running about, as at such times they curve the abdomen upwards, so that it partly overhangs the thorax behind.

1. *CREMATOGASTER SCUTELLARIS*. Pl. IX. fig. 7. B.M.

Formica scutellaris, *Oliv. Encycl. Méth.* vi. 497. 32.

Latr. Hist. Nat. Fourm. 261.

Myrmica Rediana, *Duf. Rech. Anat. Hym. Mém. Ac. Sc.* vii. 477.

Géné, Mém. Soc. Ital. Sc. Pt. fis. xxiii.

Myrmica Algerica, *Lucas, Expl. Sc. de l'Algér.* iii. 300. pl. 16. f. 9.

Myrmica rubriceps, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 44.

Acrocœlia rubriceps, *Mayr. Ein. neue Ameis. in Verhandl. des zool.-bot. Vereines in Wien*, Band ii. 1852.

Acrocœlia Schmidti, *Mayr. Ein. neue Ameis. in Verhandl. des zool.-bot. Vereines in Wien*, Band ii. 1852.

Crematogaster scutellaris, *Mayr. Form. Austr.* 197. 1.

Myrmica scutellaris, *Nyl. Form. Fr. et d'Algér.* 100. 28.

Hab. Europe; France; Austria; Switzerland; Tuscany; Sardinia; Hungary; Dalmatia.

2. *CREMATOGASTER SORDIDULUS*. Pl. IX. figs. 4—6. B.M.

Myrmica sordidula, *Nyl. Addit. Alt. Mon. Form. Bor. Eur.* 44; *Form. Fr. et d'Algér.* 101.

Acrocelia Mayri, Schmidt, *Mayr. Beitr. zur Kenntn. der Ameis.* p. 14.

Creinatogaster sordidula, Mayr. *Form. Austr.* 200.

Hab. Europe (France; Austria); Dalmatia.

3. CREMATOGASTER CASTANEUS. Pl. IX. fig. 2. B.M.

Worker. Length 2 lines.—Head and thorax rufo-ferruginous; abdomen brownish-black, with the base obscure rufo-fuscous. The head, seen above, rotundate, scarcely shining; the thorax deeply constricted at the base of the metathorax, which is armed with two diverging acute spines; the legs ferruginous, the tibiae and tarsi darkest. Abdomen: the first node of the petiole viewed in front, heart-shaped, the pointed end upwards; the second node globose, with a deep longitudinal incision above.

Female. Length 4 lines.—Rufo-ferruginous, smooth and shining: the thorax with a central and two lateral longitudinal rufo-fuscous stripes, the metathorax not spined; wings hyaline, the nervures testaceous. Abdomen oblong, the apical margins of the segments fuscous, and slightly depressed and thinly sprinkled with short cinereous pubescence.

Hab. Albania.

4. CREMATOGASTER KIRBII.

Myrmica Kirbii, Sykes, *Trans. Ent. Soc.* i. 99. t. 13. f. 2 ♀, 3 ♂, and f. 1. nest.

Jerdon, Madr. Journ. Lit. & Sc. 114; *Ann. & Mag. Nat. Hist.* new ser. xiii. 55. 20.

Hab. India (Poona, and forests of the Wynaad).

5. CREMATOGASTER ANTHRACINUS. B.M.

Worker. Length $1\frac{1}{2}$ line.—Jet-black, smooth and shining the face with a few delicate striæ, the extreme base of the scape and the apex of the flagellum pale testaceous. Thorax flattened above, opaque and finely rugose; the metathorax armed on each side with an acute spine; the tarsi pale testaceous, the claw-joint darkest. Abdomen heart-shaped, smooth, shining and impunctate.

Hab. Singapore.

6. CREMATOGASTER INFLATUS. Pl. IX. fig. 1. B.M.

Worker. Length $2\frac{1}{2}$ lines.—Black, smooth and shining: the antennæ dark rufo-piceous; the mandibles ferruginous, striated with their teeth black; the eyes small and lateral, placed above

the middle at the sides of the head. Thorax: the anterior margin rounded, the posterior portion forming a semi-transparent bladder-like swelling, with a deep longitudinal depression in the middle; the inflated part not quite so wide as the head; the apical joints of the tarsi rufo-testaceous. Abdomen heart-shaped; the peduncle, base and apical margin of the first segment obscurely rufo-piceous.

Hab. Singapore; Borneo (Sarawak).

9. *CREMATOGASTER DIFFORMIS*.

B.M.

Worker. Length $2\frac{1}{4}$ lines.—Black: the head twice as wide as the thorax; the tips of the mandibles and the apical joints of the flagellum dark ferruginous; the head smooth and shining; the eyes small, placed about the middle at the sides of the head. Thorax: the anterior margin rounded, the metathorax greatly dilated, with a deep excavation behind; the legs stout, with their articulations and the tarsi ferruginous. Abdomen heart-shaped, with the base, in some examples, slightly ferruginous.

Worker minor only differs in being one-third smaller.

Hab. Borneo (Sarawak); Singapore.

10. *CREMATOGASTER OBSCURUS*.

Worker. Length $1\frac{1}{4}$ line.—Dull testaceous, smooth and shining: the base of the scape and of the flagellum, as well as the clypeus and mandibles, pale testaceous; the head smooth and shining. Thorax rounded in front, and having a central longitudinal channel, deeply strangled in the middle; the metathorax subquadrate, with short spines at the posterior angles; the tips of the joints of the legs and the tarsi pale testaceous. Abdomen heart-shaped.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

11. *CREMATOGASTER CEPHALOTES*.

Worker. Length $1-1\frac{1}{4}$ line.—Testaceous: head very large, smooth and shining; the antennæ, clypeus and mandibles pale testaceous. Thorax deeply constricted in the middle, rugose in front, with a smooth shining space before the constriction; the metathorax deeply excavated, having on each side an acute spine; the tibiæ and tarsi pale testaceous. Abdomen heart-shaped; the basal node flattened anteriorly, with the sides angulated, the second node globose.

Worker minor.—Differs in having the head proportionably smaller, the thorax being smooth and shining above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

10. CREMATOGASTER BRUNNEUS.

Worker. Length 2 lines.—Reddish-brown, smooth and shining; head wider than the thorax, the vertex slightly emarginate. Thorax: the disk concave and finely striated longitudinally; the metathorax deeply concave, and furnished on each side with a stout acute spine; the legs with the tips of the joints and the tarsi pale testaceous. Abdomen heart-shaped, smooth and shining; the first node of the peduncle heart-shaped, flattened above, the second globose and bituberculate above.

Worker minor.—One-third smaller, and of a paler colour.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

11. CREMATOGASTER ARBOREUS. Pl. XIV. *Nest.* B.M.

Worker. Length 2 lines.—Pale ferruginous, with very thin scattered short glittering hairs: the head subovate, slightly emarginate behind, delicately striated longitudinally, the mandibles with four strong acute teeth; the antennæ, tarsi, and apex of the abdomen more or less fuscous. Thorax flattened on the disk, deeply strangulated between the meso- and metathorax with the latter armed with two acute spines. Abdomen: the first node of the peduncle, viewed in front, pear-shaped, with the broad end downwards; the second node ovate, with a deeply impressed line above.

Hab. Port Natal.

The nest of this species, of which a figure is given, was sent to England by Herr Gueinzus from Port Natal: a number of specimens of the insect were found in the crevices and entrances to the nest; many individuals are of a paler colour than the one described, but all are of the same size, sex, and form.

12. CREMATOGASTER LÆVICEPS.

B.M.

Worker. Length 2 lines.—Obscure fusco-ferruginous, the antennæ and legs rather paler than the head and thorax: abdomen very dark, nearly black. The head and the mesothorax smooth and shining, the metathorax with a few delicate striæ at its base, its apex armed on each side with a stout acute spine; a deep strangulation between the meso- and metathorax. The first node of the peduncle, viewed in front, is broad and rounded at the base, narrowed upwards, its apex obtuse; the second node subglobose, with a deep longitudinal impression above; a few pale hairs scattered over the abdomen; the head, thorax, and base of the abdomen, pale rufo-testaceous beneath.

Hab. Australia (Melbourne).

A mutilated specimen of a female was received with the worker: it is of much paler colour, but is equally smooth and shining, the thorax and abdomen being elongate-ovate; the wings yellowish and subhyaline, with the nervures pale rufo-testaceous.

13. CREMATOGASTER LIMATUS.

B.M.

Worker. Length $1\frac{1}{4}$ line.—Rufo-testaceous: the abdomen very dark blackish-brown, except at the base, which is paler; the tarsi and articulations of the legs very pale testaceous, nearly white. The body entirely smooth and shining; the thorax deeply strangled in the middle, the metathorax with two slender acute spines; the nodes of the peduncle clavate, the basal one longest; the abdomen heart-shaped.

Female. Length $2\frac{1}{4}$ lines.—Of the same colour as the worker, but with the legs and the mandibles entirely pale. This sex differs from the worker in having the eyes larger and more prominent; the thorax ovate, and the spines on the metathorax short; in having wings, which are colourless, with the nervures pale testaceous: the nodes of the abdomen differ in form from those of the worker; the first node is clavate, with the upper apical margin emarginate, the lateral angles subdentate, the second node globose; abdomen as in the worker.

Male. Length $1\frac{1}{4}$ line.—Body entirely testaceous, with the antennæ and legs very pale; wings colourless and beautifully iridescent, the nervures pale testaceous; the form of the thorax and abdomen very similar to that of the female, but the head is much smaller and narrowed behind, with the eyes very prominent.

Tab. Brazil (Ega).

Mr. Bates says of this species, "The formicarium is in perforated glandular swellings in suspended air-roots of a parasitic plant. I have never found Coleopterous parasites in the nests of any species of this genus."

4. CREMATOGASTER MONTEZUMIA. Pl. I. fig. 1. Nest. B.M.

Worker. Length $1\frac{1}{4}$ line.—Obscure brown-black, opaque; the abdomen shining black. Head, seen above, rotundate, eyes rather prominent. Thorax deeply strangled between the meso- and metathorax, the latter widely and deeply excavated, with a short acute spine on each side. The first node of the peduncle, viewed in front, is oblong; the second subglobose, with a deeply impressed line above: the insect is thinly sprinkled with glittering white hairs.

Female. Length $1\frac{1}{2}$ line.—Usually of a darker colour than the worker, nearly black: the wings slightly fuscous and subopaque, the nervures pale testaceous; the metathorax armed with sharp spines; the basal node of the petiole oblong, with the angles prominent, the second node transverse and deeply notched in the middle: sprinkled with white hairs like the worker.

Male. Length $1\frac{1}{2}$ line.—Of the same colour as the worker: the head transverse; the eyes prominent, as well as the ocelli, which are placed wide apart on the vertex, the anterior one larger than the posterior pair. Thorax ovate, not spined. Abdomen closely resembling that of the worker.

Hab. Mexico.

15. CREMATOGASTER VICTIMA.

B.M.

Worker. Length 1 line.—Pale rufo-testaceous: the head usually rather darker than the thorax, the abdomen rufo-fuscous with the base palest. The head smooth and shining; the thorax slightly roughened anteriorly, the lateral margins raised, the metathorax armed with two acute spines, a deep stragulation between the meso- and metathorax; the abdomen thinly sprinkled with long pale hairs.

Hab. Brazil (Santarem).

16. CREMATOGASTER QUADRICEPS.

B.M.

Worker. Length 2 lines.—Jet-black, with the antennæ and articulations of the legs obscurely rufo-piceous: the head, viewed in front, nearly quadrate, with the hinder angles rounded; the anterior margin of the face nearly straight, the mandibles ferruginous at their apex; the head rugose, with the clypeus smooth and shining. Thorax rugose, the metathorax armed with two long acute spines; the tarsi rufo-testaceous. Abdomen: the first node oblong, the second subovate; the apex of the abdomen very acute.

Hab. Brazil (Ega).

Genus 5. MYRMICARIA.

Myrmicaria, Saund. Trans. Ent. Soc. Lond. iii. 57.

This genus of Ants is founded on characters derived from males only: in all probability the genus *Physatta*, the characters of which are derived from females, may prove to be the other sex of *Myrmicaria*; specimens of both genera have been received from India, Java, and Port Natal, but it appears desirable to keep them

separate until further information is obtained; in the genus *Myrmicaria*, the antennæ are 13-jointed, those of *Physatta* being 7-jointed; the labial and maxillary palpi 3-jointed.

1. *MYRMICARIA BRUNNEA*. Pl. X. figs. 6-8. B.M.

Myrmicaria brunnea, Saund. Trans. Ent. Soc. Lond. iii. 57. pl. 5. f. 23.

Hab. India.

2. *MYRMICARIA VIDUA*.

Male. Length 6 lines.—Brown-black, pubescent: antennæ reaching to the apex of the first node of the peduncle; mouth reddish-brown. Head rugose; the thorax longitudinally rugose on the disk; wings hyaline at the base, tinged with brown towards their apex; the nodes of the abdomen finely roughened, with a longitudinal narrow smooth line; the abdomen heart-shaped, smooth and shining, the head and thorax opaque.

Hab. Java. (Coll. East India House.)

This species differs from *M. brunnea* in the coarser sculpture of the thorax; the nodes of the abdomen are much broader, and are also roughened and very pubescent.

3. *MYRMICARIA TIGRENSIS*. B.M.

Myrmica tigreensis, Guér. Voy. Abyss. (Lefeb.) vi. 351. pl. 7. fig. 7.

Hab. Port Natal.

Genus 6. *HEPTACONDYLUS*, Smith.

Head suborbiculate, wider than the thorax; eyes lateral and ovate; the stemmata placed in a triangle on the vertex; antennæ geniculated, filiform, the scape nearly as long as the flagellum, placed forwards on the head at the base of the clypeus; the flagellum 6-jointed, the joints clavate, except the apical one, which is cylindrical; the labial palpi 3-jointed, the maxillary palpi 3-jointed. Thorax ovate, gibbous; the scutellum very prominent; the metathorax armed with two acute spines (in the female), compressed and strangulated (in the workers); the superior wings with one marginal and one complete submarginal cell, the submarginal cell receiving the recurrent nervure; the superior angle of the discoidal cell touching the costal nervure. Abdomen ovate; the peduncle composed of two nodes.

This genus presents a remarkable deviation from the general

rule, as exemplified in the aculeate Hymenoptera ; thus the normal number of joints in the antennæ of the females being 12, and 13 in the males, as a general rule, serves to discriminate the sexes : the workers also have usually 12-jointed antennæ, but in the present genus both the female and worker have only 7 joints. The genus *Orectognathus* has only 5 joints in the antennæ, but only workers are known. In *Heptacondylus*, however, the female has the same reduced number of joints as the worker, and this must be considered the perfect condition of the species.

1. HEPTACONDYLUS SUBCARINATUS.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Head, antennæ, thorax and legs ferruginous, or pale ferruginous ; abdomen fuscous, or rufo-fuscous, the petiole of the basal node pale ; head shining, and having a number of short, irregular, delicate carinæ on the front and vertex ; there are also a few irregular striæ in front of the eyes. Thorax : the sides compressed, widest in front, the superior surface slightly convex, and having a number of longitudinal, abbreviated, slightly elevated carinæ, the lateral margins traversed by a slight carina ; the metathorax with two stout acute spines. Abdomen smooth and shining ; the insect sprinkled with a number of pale erect hairs, most numerous on the antennæ and legs. *Hab.* Borneo (Sarawak).

2. HEPTACONDYLUS CARINATUS.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Dark fusco-ferruginous : closely resembling *H. subcarinatus*, but with thicker antennæ and the joints shorter ; the scape distinctly shorter, and not so slender at the base ; the head proportionately larger, and much more strongly carinated ; the thorax roughly carinated, and having longer and stouter spines ; in other respects resembling *H. subcarinatus*.

Hab. Borneo (Sarawak).

Whether this can possibly be a form of *H. subcarinatus*, it is impossible to determine ; the various differences pointed out appear to distinguish a distinct species.

3. HEPTACONDYLUS LONGIPES.

B.M.

Worker. Length $2\frac{3}{4}$ lines.—Dark rufo-fuscous : the antennæ head beneath, mandibles and lower part of the face, pale rufo-testaceous ; antennæ much more slender and elongate than either of the preceding species. Head smooth and shining, not carinated. Thorax smooth and shining, the lateral margins traversed

y a sharp carina; the metathorax elevated, armed with two acute spines; the legs elongate and slender; the coxæ beneath, the base and apex of the femora and tibiæ, and the tarsi, pale ferruginous. Abdomen smooth and shining, the apex pale ferruginous.

lab. Borneo (Sarawak).

Very distinct from either of the preceding species, and distinguished by its elongate legs and antennæ.

Genus 7. MYRMECIA.

Formica, pt., *Fabr. Ent. Syst.* ii. 363 (1793).

Myrmecia, *Fabr. Syst. Piez.* 423 (1804).

Mandibles elongate, porrect, serrated on the inner edge alternately with large and small teeth, tips curved inwards and acute to the apex; maxillary palpi 6-jointed, the labial palpi 4-jointed; antennæ filiform, as long as the head and thorax; eyes large, ovate, prominent, situated forwards at the sides of the head, nearly touching the base of the mandibles; ocelli present in all the sexes. Thorax elongate; anterior wings with one complete marginal, three complete submarginal, and two discoidal cells. Abdomen with two ovate nodes in the petiole. Pupæ enclosed in cocoons.

This genus of Ants appears to be confined to the continent of Australia and to Tasmania.

MYRMECIA GULOSA.

B.M.

Formica gulosa, *Fabr. Syst. Ent.* 395 ♂; *Spec. Ins.* i. 494. 34; *Ent. Syst.* ii. 363. 55.

Oliv. Encycl. Méth. vi. 501. 50.

Latr. Hist. Nat. Fourm. 215. pl. 8. f. 49.

Myrmecia gulosa, *Fabr. Syst. Piez.* 424. 2.

Formica gulosa, *Guér. Voy. Coq.* ii. 206.

lab. Australia.

The male of this species differs from the other sexes, principally in having the antennæ nearly as long as the body, the scape very short, the head compressed, the eyes and ocelli very prominent; it is about the same size as the other sexes.

MYRMECIA FORFICATA.

B.M.

Formica forficata, *Fabr. Ent. Syst.* ii. 363. 56.

Oliv. Encycl. Méth. vi. 501. 51.

Myrmecia forficata, Fabr. *Syst. Piez.* 424. 3; & *Cab. Banks. Mus. Linn. Soc.*

Hab. Tasmania.

3. MYRMECIA SIMILLIMA.

B.M.

Worker. Length 7 lines.—This species is very like *M. forficata*, of which possibly it may be a variety; but it is more coarsely sculptured; the striation is longitudinally divergent on the prothorax, and irregularly roughened transversely on the meso- and metathorax; in *M. forficata* the prothorax has a regular transverse curved striation, that on the mesothorax and scutellum being regularly striated *longitudinally*; this difference in striation appears to characterize a distinct species.

Hab. Australia.

4. MYRMECIA PYRIFORMIS. Pl. X. figs. 1-6.

B.M.

Worker. Length 8½-9 lines.—Black, with an obscure tinge of red: the anterior part of the face and the mandibles ferruginous; the legs obscure ferruginous, with the tarsi brighter, varying in different individuals in brightness; the abdomen shining black, the nodes nearly black. Head longitudinally rugose; the prothorax with a transverse rugose striation, the rest of the thorax transversely striated; the first node of the abdomen rugose.

Female. Length 10 lines.—Of the same colour as the worker differing only in having the thorax oblong-ovate, not strangular in the middle, and with the mesothorax and scutellum rugose-striate; wings hyaline, nervures pale rufo-testaceous.

Male. Length 8 lines.—Black, with the antennæ, mandibles and tarsi ferruginous; the head and thorax densely pubescent: the pubescence pale and glittering. Abdomen with a fine granular pile, and a thinly scattered pale pubescence; the thorax wider than the head, which is narrowed posteriorly; the antennæ as long as the head, thorax and nodes of the abdomen.

Hab. Australia (Melbourne; Hunter River).

This species very closely resembles the *M. forficata*, but is certainly distinct, if the sexes are correctly assimilated, and being taken at the same time and place render it probable; the sexes are larger than those of *M. forficata*; the male is strikingly distinct, and the head of the worker and female of a squarer form and not narrowed behind.

5. MYRMECIA VINDEX.

B.M.

Worker. Length 7 lines.—Ferruginous, with the abdomen

black; the nodes of the petiole ferruginous; the sculpture nearly the same as in *M. sanguinea*; the mandibles are, however, longer, more strongly toothed, and of a pale yellow colour; the nodes of the petiole are more elongate, and the petiole of the first node is longer and more slender; the insect is of a duller red than *M. sanguinea*; the head sometimes fuscous-red.

Hab. West Australia.

6. MYRMECIA TARSATA.

B.M.

Worker. Length 8-9½ lines.—Black: the mandibles, antennæ and tarsi pale reddish-yellow; abdomen smooth and shining black, with a greenish tint. Head longitudinally rugose; the prothorax with a divergent rugose striation, that on the meso- and metathorax coarse and transverse; on the first node of the petiole it is longitudinal; the three apical segments of the abdomen pale rufo-testaceous.

Hab. Australia (Hunter River, &c.).

7. MYRMECIA RUFINODIS.

B.M.

Worker. Length 7 lines.—Black: the antennæ, mandibles, tarsi and anterior tibiæ, as well as the articulations of the legs, ferruginous; the nodes of the petiole bright ferruginous. Head longitudinally rugose; the striation on the thorax transverse, that on the prothorax curving round the sides. The first node of the petiole subrugose, the second smooth and shining; the margins of the apical segments of the abdomen pale testaceous.

Hab. Adelaide.

8. MYRMECIA MANDIBULARIS.

B.M.

Worker. Length 5 lines.—Black and shining: head quadrate and longitudinally striated; mandibles straight, with a slight bend at their base, of nearly equal width throughout, convex above, flattened beneath, obliquely truncate, forming a bent tooth at the apex; the inner edge with three or four teeth. Thorax: the pro-, meso- and metathorax above, much more strongly striated longitudinally than the head; the metathorax transversely striated behind; the apical joints of the tarsi ferruginous. Abdomen: the first node of the petiole, viewed sideways, is quadrate; above, it is convex, widest behind, and coarsely rugose; the second node subglobose, and longitudinally and finely striated, the abdomen densely clothed with ferruginous pubescence.

Hab. Adelaide.

9. MYRMECIA PILOSULA.

B.M.

Worker. Length $4\frac{1}{2}$ lines.—Black: covered with a fine, short, silky, ashy pile: the head quadrate, with the angles rounded, longitudinally striated, the striæ irregular, running into one another; the prothorax with striæ diverging from the centre; the striæ on the meso- and metathorax above are longitudinal, but on the oblique truncation they are transverse; the nodes of the peduncle globose, the first rugose, and with a short thick petiole. The mandibles, antennæ, tibiæ, tarsi, apical half of the anterior femora, and tips of the intermediate and posterior pairs, pale rufo-testaceous.

Female. Length 5 lines.—Of the same colour as the worker, similarly pilose: the thorax broader and more coarsely sculptured; the first node of the petiole transversely and coarsely rugose, with a central longitudinal carina.

Male. Length $3\frac{1}{2}$ lines.—Resembles the other sex, but has the antennæ, tibiæ and tarsi dark obscure testaceous; it is altogether more coarsely rugose, not distinctly striate; the first node of the petiole rugose and carinated as in the female.

Hab. Australia; Tasmania.

10. MYRMECIA PILIVENTRIS.

Worker. Length 6 lines.—Black: the abdomen covered with pale golden pubescence; mandibles porrect, nearly straight, rounded above, longitudinally grooved beneath, somewhat obliquely truncate at the apex, the tip slightly bent, the inner edge with a few minute teeth directed backwards. The head longitudinally striated, the thorax very coarsely so, the striation on the metathorax transverse. Abdomen: the basal node coarsely rugose, with a longitudinal central carina beneath, terminating in a strong tooth at the base.

Hab. Australia. (Coll. F. Smith.)

11. MYRMECIA PICTA.

B.M.

Worker. Length 4–5 lines.—Black: the mandibles and face before the insertion of the antennæ pale reddish-yellow; the anterior legs entirely, and the intermediate and posterior femora and tibiæ ferruginous, the posterior femora more or less dusky; the head and thorax opaque, with a thin cinereous pile; the head substriate; the carinæ between the antennæ extending to the anterior ocellus; the posterior margin of the head emarginate. The first node of the peduncle fusco-ferruginous, subglobose and rugose. Abdomen slightly shining, with a thin cinereous pubescence.

Female. Length 5 lines.—Head as in the worker; the meso- and metathorax ferruginous above and at the sides; the legs ferruginous, with the intermediate and posterior coxæ black; the posterior femora towards the apex and the base of the tibiæ fuscous; the nodes of the petiole ferruginous, the second node fuscous above. Abdomen slightly shining, and thinly covered with cinereous pile and pubescence.

Hab. Adelaide.

This is a very marked and distinct species; only two specimens have been received.

12. MYRMECIA CRUDELIS.

B.M.

Worker. Length 7 lines.—Black: the clypeus and mandibles yellow, with the teeth and apex of the latter ferruginous; the antennæ and tarsi pale ferruginous; the femora and tibiæ dark rufo-piceous; the head longitudinally rugose. Thorax with obscure ferruginous tints, the prothorax with a curved transverse striation, the meso- and metathorax transversely and coarsely striated. The first node of the petiole slightly roughened, the second and the abdomen smooth and shining.

Female.—This sex only differs in the usual sexual characters, the thorax being elongate-ovate, and not strangulated in the middle.

Hab. Adelaide.

13. MYRMECIA NIGROCINCTA.

B.M.

Worker. Length 5 lines.—Black: the mandibles, antennæ, thorax and basal node of the peduncle, ferruginous; the mesothorax black, obscurely reddish beneath; the legs dark rufo-piceous, with the tarsi and front of the anterior tibiæ ferruginous. The head finely longitudinally rugose; the prothorax with a central longitudinal depression on the disk, and very finely sculptured with a curved transverse striation, which passes obliquely down the sides; the meso- and metathorax very finely striated transversely, the latter with an elongate depression in the middle above; both the nodes smooth and shining; the second node with some obscure ferruginous tints. Abdomen shining, and covered with a fine, silky, cinereous pile, the apex sprinkled with a few long pale hairs.

Hab. Australia.

14. MYRMECIA TASMANIENSIS.

B.M.

Worker. Length 6 lines.—Black: the mandibles, antennæ,

legs, and second node of the petiole, ferruginous. The head longitudinally rugose, not striated; the prothorax rugose, the rugosity running in a transverse curved direction; the meso- and metathorax transversely rugose; the first node of the peduncle subglobose and coarsely rugose, the second node smooth and shining, with a few scattered punctures; the abdomen smooth and shining, the apical margins of the first and second segments and the whole of the other segments ferruginous.

Hab. Tasmania.

15. MYRMECIA SANGUINEA.

Worker. Length 6-9 lines.—Blood-red: the abdomen black; the head longitudinally rugose-striate, not coarsely so. The prothorax with striae diverging from the centre, that on the meso- and metathorax transverse; a deep strangulation between the meso- and metathorax; the first node of the petiole more or less rugose, both blood-red.

Hab. Tasmania. (Coll. F. Smith.)

Genus 8. ECITON.

Formica, pt., *Fabr. Ent. Syst.* ii. 364 (1793).

Myrmecia, pt., *Fabr. Syst. Piez.* 423 (1804).

Eciton, *Latr. Hist. Nat. Crust. et Ins.* iv. 130 (1804).

Ancylognathus, *Lund, Ann. Sc. Nat.* xxii. (1831).

Camptognatha, *Westw. Griff. An. Kingd.* xv. 5. 16 (1832).

The maxillary palpi 2-jointed, the labial palpi 3-jointed. The societies comprise males, females and workers, the latter consisting of two kinds of individuals, the larger kind in some species having the mandibles elongate, curved, somewhat sickle-shaped, but not flattened, the head very large; the large and small workers with very minute eyes, in some species obsolete. Thorax unarmed. Abdomen small and ovate, the petiole with two nodes; the workers armed with a sting.—Males and females not known. Pl. VI.

1. ECITON HAMATA. Pl. VI. figs. 5, 6, 8.

B.M.

Formica hamata, *Fabr. Ent. Syst.* ii. 364. 58 (worker major).

Latr. Hist. Nat. Fourm. 242. pl. 8. f. 54.

Myrmecia hamata, *Fabr. Syst. Piez.* 425. 6.

Eciton hamata, *Latr. Gen. Crust. et Ins.* iv. 129.

Smith, Trans. Ent. Soc. Lond. iii. new ser. 16. 1.

Formica curvidentata, *Latr. Hist. Nat. Fourm.* 269 (worker minor).

Eciton curvidentata, Smith, *Trans. Ent. Soc. Lond.* iii. new ser. 162. 3.

Hab. Brazil (Para); Cayenne.

Latreille's species are united on the authority of Mr. H. W. Bates, who says, "I have observed its legions in processions of great extent, but up to the present time I have been unable to meet with the other sexes; their societies are so numerous and the sting of the insects so severe, that an attack on one of their colonies is not to be rashly undertaken."

2. ECITON DREPANOPHORUM.

B.M.

Worker major. Length 4-4½ lines.—Reddish-yellow, with the head pale testaceous yellow, smooth and shining; very closely resembling *E. hamata*, but with the scape of the antennæ ferruginous: in *hamata* the antennæ are entirely black; the head more narrowed behind, the eyes black, and differing also in having the second node of the abdomen narrower; the mandibles in both species elongate, curved and sickle-shaped.

Worker minor. Length 4-4½ lines.—Distinguished from the worker of *hamata* by having the scape ferruginous, the mandibles distinctly denticulated on their inner margin; the second node of the petiole more narrow and elongate.

Hab. Brazil (Ega).

The distinction of this species from *hamata* rests entirely on a comparison of specimens. Mr. Bates has furnished the following particulars:—"This *Eciton* is the common species at Ega, its columns of foragers being seen very often, but not daily, in different parts of the forest; it is very nearly allied to a species ticketed 42 (*hamata*), but it differs in always having the basal joint of the antennæ pale: in 42 it is always concolorous. The large-headed individuals are always extremely similar one to another, none occurring intermediate in size between them and the small ones. I am quite convinced these large-headed ones are a distinct order of individuals in a colony of *Ecitons*, and fulfil some distinct, peculiar functions; what those functions are I cannot decide at present; I once saw something of their relations to the rest of the colony in a very large and extraordinary procession. On a clayey piece of ground near the beach, just outside the margins of the forest where the place formed a snug little haven surrounded by high rocks and shrubbery, a dense column of *Ecitons* descended from amongst the rocks on one side of the harbour, traversing the beach and climbing again the opposite side; the length of the column visible was from 60 to 70 yards, and yet there was no appearance of either the van or the rear of the army; they were all moving in the same direction except a few indivi-

duals outside the column, these occasionally ran rearward a short distance, and then again advanced in the direction of the main body: these means were apparently for the purpose of keeping up a current of intelligence along the line. In fact when I disturbed the column, or abstracted an individual, intelligence of the disturbance was very rapidly communicated several yards backwards, and the column at that point commenced retreating. The procession was not a predatory affair, because all the small-headed individuals conveyed in their mandibles a little cluster of white maggots, probably larvæ of their own species. I have no doubt of its being a migration, as at the time of observation a change of season was taking place, the river retreating from the beach, and the open places above, about to be burnt up by the hot sun of the dry season.

"The large-headed individuals were in proportion of perhaps about five in one hundred to the small individuals, but not one of them carried anything in its mandibles; they were all trotting along outside the column, and distributed in regular proportion throughout the whole line of army, their globular white heads rendering them very conspicuous among the rest, bobbing up and down as they traversed the inequalities of the road.

"The progress of these ants is not in one simple line when on a foraging expedition, but a line with many branches; a column is occasionally pushed out in the direction of some promising locality. I once observed one of these terminating at a decayed fallen tree; the ants were busy about it, a few having seized some large *Formicidæ*, and also some soft-bodied wasps, these they tore in pieces, and divided the load; the whole column then retired, and re-entered the main line. A branch column is not a party separated from the rest—there is no break in the lines of these ants—but there is always a number passing and repassing, keeping up the line of communication.

"I lately discovered what I imagined was a formicarium of *Eciton*: I traced a procession in which many were carrying ova, larvæ, and pupæ; at a short distance I found the column terminating abruptly, not as I expected at a vast earthy dome, but at a heap of dead leaves in a hard trodden pathway; on the leaves were mustered an unusual number of the large-headed individuals, who resisted my disturbing the leaves with great ferocity. I found under the leaves a large collection of ova, pupæ, and larvæ, all apparently of one species, certainly a *Myrmicide*, as the pupæ were not enclosed in cocoons; the small-headed workers rapidly gathered up the whole, and a great number of others soon came up, including many of the large-headed fellows, and attacked me most furiously; it was no doubt a temporary store made during a predatory expedition."

3. ECITON VAGANS.

B.M.

Formica vagans, Oliv. *Encycl. Méth.* vi. 501.

Eciton vagans, Smith, *Trans. Ent. Soc. Lond.* iii. new ser. (worker major).

Eciton simillina, Smith, *Trans. Ent. Soc. Lond.* iii. new ser. (worker minor).

Hab. Brazil; Mexico.

The *E. vagans* and *E. crassicornis* have been received from the same locality, and both are entirely of a reddish-brown colour, including the mandibles and legs; there can be little doubt of their belonging to the same species; in general form they resemble *E. hamata*, the large worker having similar elongated curved mandibles.

4. ECITON RAPAX. Pl. VI. figs. 6, 7.

B.M.

Eciton rapax, Smith, *Trans. Ent. Soc. Lond.* iii. new ser.

Atta quadriglumis, Halid. *Trans. Linn. Soc.* xiv. 328.

Hab. Brazil (Para; Santarem; Ega).

This species is readily distinguished by its having the head, thorax, legs and nodes of the abdomen opaque black, and the abdomen pale reddish yellow. Mr. Bates says, "This is the largest species of the genus that I have seen; its columns are narrower than those of the other species, in fact they generally run along in single file, and forage in the same way. I have found them carrying off great numbers of cocoons of a species of *Formica*; I have searched the columns long and repeatedly without finding any individuals with large heads and long mandibles."

5. ECITON CRASSICORNIS. Pl. VI. figs. 1, 2, 3, 4.

B.M.

Eciton crassicornis, Smith, *Trans. Ent. Soc. Lond.* iii. new ser.

Hab. Brazil (Villa Nova).

This is a species very easily recognized by its short thick antennæ; the large workers are not furnished with elongated mandibles.

6. ECITON LEGIONIS.

B.M.

Eciton legionis, Smith, *Trans. Ent. Soc. Lond.* iii. new ser.

Hab. Brazil (Santarem).

7. ECITON PILOSA.

B.M.

Worker. Length $2\frac{1}{2}$ lines.—Brown-black, smooth and shining:

the antennæ, mandibles, face anteriorly, and the legs, rufo-testaceous; the insect thinly covered with long griseous pubescence. Head ovate; the eyes very minute, and glassy bright. Thorax shining and smooth, anteriorly roughened, and opaque behind, deeply strangled a little behind the middle; the metathorax not grooved above, rounded behind. Abdomen ovate; the first node of the peduncle elongate-ovate, the second globose.

Worker minor. Length $1\frac{1}{2}$ line.—There is no difference between this and the large worker, except in its being smaller.

Hab. Brazil (Villa Nova).

8. ECITON PRÆDATOR.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Ferruginous: the head and thorax very finely, closely and delicately punctured; head very large, as in *E. hamata*; mandibles very stout, widened at their apex, their inner margin smooth, blunt at the tip, produced within into a blunt tooth, finely striated longitudinally. Thorax narrowed behind; the metathorax not spined or grooved above. Abdomen small and ovate; the first node of the peduncle longer than the second, which is nearly globose.

Worker minor. Length 2 lines.—This differs from the large worker in the form of its mandibles, they are of a more triangular form, their apex acute, and curved downwards, their inner margin finely denticulated; the antennæ are longer, and, as well as the legs, much paler; in other respects they agree.

Hab. Brazil (Ega).

Of the habits of this species Mr. Bates furnishes the following account: "This species of *Eciton* differs from all the others in its habits; instead of foraging in narrow columns, it hunts in dense masses of myriads of individuals. Nothing in Entomology is more curious than to watch the vast compact body moving rapidly along; where they pass, all the rest of the insect world is in commotion and alarm. They stream along the ground, and climb to the summit of all the lower trees, searching every leaf to its apex; when they come to a mass of decaying vegetable matter, they cover it with a living crowd, penetrate every chink and cranny, then leave it, and rapidly move on. All apterous insects, especially fat spiders and larvæ of *Blatta*, which latter are excessively numerous about the fallen foliage, scamper off before the rapidly moving mass, in quite a ludicrous manner. The smaller larvæ of Lepidoptera and Diptera fall an easy prey to them, as well as some of the large obese species of the genus *Formica*. The phalanx altogether, when passing over a tract of open ground, occupies a space of from six to ten square yards; on examining them closely, they are seen to move not

gether in one uniform direction, but in variously spreading the columns, now separating a little from the general mass, reuniting with it. The margins of the phalanx spread out like a cloud of skirmishers from the vast army. I have been able to find their fornicarium, and have not the least idea how or where to find it."

ÆCITON PACHYCERUS.

B.M.

Worker. Length 2 lines.—Chestnut-red: smooth and shining. Antennæ short and very stout, shorter than the thorax. Thorax anteriorly shining, the metathorax opaque; the nodes of the petiole incrassate, subglobose; the femora very slender at the base, and incrassate towards their apex; entirely destitute of pubescence.

b. South America? (Coll. Gen. Hardwick.)

This species is the only one of the genus which is apparently entirely destitute of eyes; in *E. legionis* and *E. pilosa* they are very minute, but we have failed, even with the aid of a powerful microscope, in our endeavours to discover them in this species.

Genus 9. PSEUDOMYRMA.

Pseudomyrma, Guér. *Icon. Règ. Anim.* 427 (1835-8).

Myrmex, Guér. *Icon. Règ. Anim.* 427 (1835-8).

Myrmalea, Spin. *Mem. Accad. Torino*, xiii. 68. 30.

Myrmoponera, Smith, *Ann. & Mag. Nat. Hist.* 2nd ser. ix. 44 (1842).

Antennæ subclavate, 13-jointed in the females, 12-jointed in the workers, not quite so long as the head and thorax, inserted anteriorly on the face, approximating at their base; mandibles angular, toothed on their inner margin; eyes largely developed, elongate-ovate, occupying a large portion of the head;celli present in all the sexes. Thorax elongate; anterior wings with one marginal and three complete submarginal cells; the hind wing large, and extending to the apex of the wing. Abdomen elongate, pedunculate, the peduncle with two nodes, the first smaller than the second and pedunculate, the second node globose.

Having obtained females of *Pseudomyrma*, and finding this species in every particular agreeing with the generic characters laid down by Guérin, we have no hesitation in coming to the conclusion that the *Pseudomyrmex* is the female of *Pseudomyrma*.

. PSEUDOMYRMA BICOLOR.

Pseudomyrma bicolor, Guér. *Icon. Règ. Anim.* 427 ♀.

Smith, *Trans. Ent. Soc. new ser.* iii. 157. 1 ♀.

Lab. Columbia.

This species is 5 lines in length, black, shining, and covered with silky pile; the mouth, anterior margin of the face, the flagellum beneath, the articulations of the legs, the anterior tibiæ, and the tarsi, rufo-testaceous; the first node of the peduncle ferruginous.

2. PSEUDOMYRMA UNICOLOR.

Pseudomyrma unicolor, *Smith, Trans. Ent. Soc. new ser. iii.* 158.

2♂.

Hab. Brazil.

This insect is black, smooth and shining, covered with pale glittering pile and scattered erect hairs; the thorax flattened above; the mandibles and claws of the tarsi rufo-testaceous.

3. PSEUDOMYRMA TERMITARIA.

B.M.

Pseudomyrma termitaria, *Smith, Trans. Ent. Soc. new ser. iii.*

158. 3♀♂.

Hab. Brazil.

Mr. Bates informs us that this species forms its elliptical chamber or dwelling in the walls of the tumuli of a species of white ant; it is of a ferruginous colour, with the head and apical segments of the abdomen black; the margins of the segments of the latter rufo-piceous; the mandibles and antennæ ferruginous, the latter more or less fuscous above; it is $3\frac{1}{2}$ lines in length.

4. PSEUDOMYRMA MACULATA.

Pseudomyrma maculata, *Smith, Trans. Ent. Soc. new ser. iii.* 158.

4♂.

Hab. Brazil.

This species is 3 lines long, of a ferruginous colour, with the abdomen and second node of the petiole fuscous; there is also a fuscous spot on the vertex enclosing the ocelli, and a fuscous longitudinal stripe on the metathorax; the eyes large and black, the mandibles pale testaceous.

5. PSEUDOMYRMA SERICATA.

Pseudomyrma sericata, *Smith, Trans. Ent. Soc. new ser. iii.* 159.

5♂.

Hab. Brazil.

This species is readily distinguished, being black, and covered with a glittering silvery pile; the legs are dark rufo-testaceous, with the anterior tibiæ, knees and tarsi pale testaceous; the tips of the antennæ, the anterior margin of the face, and the mandibles, pale testaceous; its length is $3\frac{1}{2}$ lines.

6. *PSEUDOMYRMA ELEGANS*.

Pseudomyrma elegans, *Smith, Trans. Ent. Soc. new ser. iii.* 159.
6 ♂.

Hab. Brazil (Para).

This species has the head and abdomen black, the thorax, legs and nodes of the petiole, ferruginous; the scape in front, the base of the flagellum, the anterior margin of the face and the mandibles, ferruginous; it is 3 lines long.

7. *PSEUDOMYRMA NIGRICEPS*.

B.M.

Pseudomyrma nigriceps, *Smith, Trans. Ent. Soc. new ser. iii.* 159.
7 ♂.

Hab. Brazil (Santarem).

This species is $2\frac{1}{4}$ lines long, of a ferruginous colour, with the head black, and the apical segments of the abdomen fuscous; the thorax and first node of the peduncle flattened above, the lateral margins slightly raised, forming sharp carinæ; the mouth and antennæ red, the latter fuscous towards the apex above.

8. *PSEUDOMYRMA OCULATA*.

B.M.

Pseudomyrma oculata, *Smith, Trans. Ent. Soc. new ser. iii.* 159.
8. pl. 13. f. 9 ♀ ♂.

Hab. Brazil.

This curious species is distinguished by the remarkable form of the head, which is two-thirds the length of the thorax; it is elongate with its sides parallel, and wider than the thorax; of a fusco-testaceous colour with hyaline wings.

9. *PSEUDOMYRMA CEPHALICA*. Pl. X. figs. 25, 26. B.M.

Pseudomyrma cephalica, *Smith, Trans. Ent. Soc. new ser. iii.* 168.
11 ♂ ♀ ♂.

Hab. Brazil (Villa Nova).

All the sexes of this species were found by Mr. H. W. Bates in their formicarium, the chambers of which were excavated in dead twigs. The male is $2\frac{1}{4}$ lines long, and of a fusco-testaceous colour, the face, clypeus, mandibles, antennæ and legs being pale testaceous; the wings are colourless and beautifully iridescent. The female is of a reddish-yellow, with the eyes, the ocelli, the basal margin of the first segment of the abdomen, and the two apical segments, black; the head elongate, with the sides parallel. The worker is of the same colour as the female, but

the metathorax and abdomen are slightly fuscous, the femora are also more or less fuscous; the head is oblong, slightly narrower behind, the eyes large, ovate and black:

10. PSEUDOMYRMA MANDIBULARIS.

Leptalea mandibularis, *Spin. Mem. Accad. Torino*, xiii. 68. 50.

Hab. Para.

This species is described as being black, with the mandibles white; eyes large, oblong and ovate; antennæ short, thick, and inserted near the mouth; the abdomen with two nodes, both petiolated, the first being much smaller than the second, and having a long petiole; from these characters, it appears to belong to the genus *Pseudomyrma*.

11. PSEUDOMYRMA TESTACEA.

Tetraponera testacea, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 45 ♀; *Trans. Ent. Soc.* 2nd ser. iii. 10.

Pseudomyrma testacea, *Smith, Trans. Ent. Soc.* new ser. iii. 168. 10

Hab. South America (Napo).

Entirely rufo-testaceous, smooth and shining; the head oblong, the sides parallel, emarginate behind; the eyes large and ovate, and, as well as the ocelli, black; an impressed line runs from the anterior ocellus to the insertion of the antennæ. This species is $3\frac{1}{2}$ lines long.

12. PSEUDOMYRMA PERBOSCII.

Myrmex Perbosci, *Guér. Icon. Règ. Anim.* iii. texte 428 ♀.

Hab. Yucatan (Bay of Campeachy).

This species is $4\frac{1}{2}$ lines long, of a reddish-yellow, with the abdomen black; the head is oblong, with the margins parallel; the thorax elongate, the wings tinted with yellow, the nervure brown; the legs, abdomen and nodes of the peduncle, of the same form as in the rest of the species.

13. PSEUDOMYRMA PHYLLOPHILA.

Worker. Length $2\frac{1}{2}$ lines. — Obscure rufo-testaceous: the head and prothorax of the brightest colour; the antennæ, face anteriorly, mandibles, anterior tibiæ, the tarsi and articulations of the legs, pale testaceous; the antennæ dusky towards the apex. Abdomen ovate, pointed at the apex, covered with fine silky pile; the first node of the abdomen clavate, the petiole short

and thick, with a minute acute tooth at the base beneath, the sides of the node flattened; the second node much wider and subglobose.

Hab. Rio (Constantia). (Coll. Rev. Hamlet Clark.)

This species resembles *P. sericata*, but in that species the petiole is longer and very slender, and not toothed beneath.

14. PSEUDOMYRMA EJECTA.

Worker. Length $1\frac{1}{2}$ line.—Rufo-testaceous, smooth and shining: the head, hinder part of the thorax, femora and tibiae, darker-coloured; abdomen blackish-brown; the thorax strangulated in the middle, the first node of the petiole subelongate, a minute tooth at the base of the petiole beneath, both the nodes rufo-testaceous; the tarsi pale testaceous.

Hab. —?

The habitat is probably Brazil; it is the smallest species of the genus known.

15. PSEUDOMYRMA FLAVIDULA.

Worker. Length $2\frac{3}{4}$ lines.—Entirely smooth and shining yellow: the eyes and tips of the mandibles black; the head broader than in *P. pallida*, which it much resembles; a very faintly impressed line runs from the anterior stemma to the clypeus, which has a deeper impressed pit in the middle. Thorax strangulated in the middle. Abdomen covered with a fine silky pile; more or less fuscous at the apex, and with a fuscous spot, more or less distinct, on each side at the base.

Hab. Brazil (Santarem).

16. PSEUDOMYRMA FABER. Pl. XIII. fig. 11.

Worker. Length 3 lines.—The head and thorax dark blackish-brown, the coxæ and femora dark rufo-piceous, the mandibles, tibiae and tarsi rufo-testaceous; the mandibles, anterior margin of the face and the abdomen, pale testaceous, entirely smooth and shining; the first node of the petiole slender and ~~ovate~~, the second subclavate and more ovate.

Hab. Brazil (Ega).

17. PSEUDOMYRMA CLADOICA. Pl. XIII fig. 12

Worker. Length 4 lines.—Head black — the ~~mandibles~~ ~~anterior margin~~ ~~of the face~~ ~~and the abdomen~~ reddish-yellow; the tarsi, and ~~the~~ ~~anterior margin~~ ~~of the face~~ ~~and the abdomen~~

posterior tibiæ, the mandibles and base of the scape of the antennæ, dark rufo-piceous. The head densely covered with pale golden pubescence, and very broad, much wider than the thorax; the eyes very large and ovate; the thorax flattened above, the lateral margins acute, the disk longitudinally aciculate; the nodes of the petiole and the abdomen smooth and shining; the entire insect sprinkled with erect black hairs.

Hab. Brazil (Ega).

18. *PSEUDOMYRMA VIDUA*. Pl. XIII. fig. 13.

Male. Length 3 lines.—Rufo-testaceous: the apex of the abdomen fuscous; the face, antennæ and legs paler than the thorax or abdomen; the eyes and ocelli large and prominent, the former black, the latter of a glassy brightness; wings hyaline and beautifully iridescent, the nervures testaceous.

Hab. Brazil (Ega).

19. *PSEUDOMYRMA LIGNISECA*.

Female. Length 3 lines.—Reddish-yellow: eyes very large, ovate and black; the teeth of the mandibles blackish; the head anteriorly, the antennæ and legs, pale rufo-testaceous; the prothorax with the lateral margins acute and slightly raised; the first node of the petiole clavate and compressed, with a deep longitudinal groove above, the lateral margins forming elevated carinæ which are prolonged at the apex, forming two blunt teeth; the second node globose; the first segment of the abdomen with a slight stain on each side at the base, and the two following segments also slightly stained, their apical margins pale.

Hab. Brazil (Ega).

20. *PSEUDOMYRMA VENUSTA*.

Female. Length $5\frac{1}{2}$ lines.—The head, thorax and legs black, the abdomen ferruginous; the scape in front, the apex of the antennæ, the anterior margin of the face, the mandibles, the anterior tibiæ and tarsi, the intermediate tibiæ in front, as well as the apex of the femora in front, rufo-testaceous; the articulations of the legs pale; the head and thorax covered with a fine silky pile; the first node of the petiole subglobose, the second node rounded and narrowed to its base; the abdomen covered with a pale golden pile, bright and glittering in certain lights.

Hab. Brazil (Ega).

21. *PSEUDOMYRMA PALLIDA*.

B.M.

Pseudomyrma pallida, *Smith, Trans. Ent. Soc. new ser. iii. 9* ♀.*Hab.* East Florida.

This species is honey-yellow, the eyes being large and black ; it is entirely smooth and shining, and 2 lines long.

22. *PSEUDOMYRMA MINUTA*.*Eciton minutum*, *Jerdon, Madr. Journ. Lit. & Sc. (1851) 112* ♀ ;
*Ann. & Mag. Nat. Hist. 2nd ser. xiii. 53.**Hab.* India (The Carnatic and Malabar).23. *PSEUDOMYRMA RUFIPES*.*Eciton rufipes*, *Jerdon, Madr. Journ. Lit. & Sc. (1851) 112* ♀ ;
*Ann. & Mag. Nat. Hist. 2nd ser. xiii. 53.**Hab.* India (Salem district).

Mr. T. C. Jerdon describes four species which appear to belong to this genus ; that they do not belong to *Eciton* is readily ascertained from the fact of their having very large eyes, which is the character of the present genus, the genus *Eciton* being remarkable for possessing the smallest eyes in the whole family of the *Formicidæ*.

24. *PSEUDOMYRMA RUFO-NIGRA*.*Eciton rufo-nigrum*, *Jerdon, Madr. Journ. Lit. & Sc. (1851) iii.*
*♂ ; Ann. & Mag. Nat. Hist. 2nd ser. xiii. 53.**Hab.* India (The Carnatic and Malabar).25. *PSEUDOMYRMA NIGRA*.*Eciton nigrum*, *Jerdon, Madr. Journ. Lit. & Sc. (1851) 112* ♀ ; *Ann.*
*& Mag. Nat. Hist. 2nd ser. xiii. 53.**Hab.* India (The Carnatic and Malabar).26. *PSEUDOMYRMA ATRATA*.*Tetraoponera atrata*, *Smith, Ann. & Mag. Nat. Hist. 2nd ser. ix. 44.*
Pseudomyrma atrata, *Smith, Trans. Ent. Soc. Lond. 2nd ser. iii.**Hab.* Bombay ; Borneo (Sarawak).

This species is entirely of a jet-black colour, smooth and shining : the extreme apex of the scape and the basal joint of the flagellum pale rufo-testaceous ; the head elongate, with the sides parallel.

27. *PSEUDOMYRMA PILOSA*.

Worker. Length $2\frac{1}{2}$ lines.—Black: the mandibles, clypeus, carinæ at the base of the antennæ, the antennæ, tibiæ, tarsi and tips of the femora, pale rufo-testaceous; the entire insect covered with fine short silky pubescence; the head prominent before the eyes; the thorax flattened above, the lateral margins with a sharp edge; the divisions between the parts of the thorax strongly marked. Abdomen: the first node with a thick petiole, the second somewhat oblong-ovate, narrowest at the base; the abdomen elongate-ovate, pointed at the apex.

Hab. Borneo.

28. *PSEUDOMYRMA CAPENSIS*.

Worker. Length 3 lines.—Reddish-yellow, smooth and shining. Head oblong-quadrangle, emarginate behind; eyes large black and ovate; only two distinct ocelli. Thorax oblong, widest in front, flattened above or very slightly convex, the lateral edges acute; the prothorax narrowed to the mesothorax, the latter and the metathorax forming an elongated oval above. Abdomen: the first node of the peduncle of a clavate form, the second semi-globular, the abdomen acute at the apex.

Hab. Cape of Good Hope.

29. *PSEUDOMYRMA NATALENSIS*.

Female. Length $3\frac{1}{2}$ lines.—Reddish-yellow: the tips of the mandibles and the apex of the abdomen blackish. Head oblong-quadrangle, the posterior angles rounded; eyes large and ovate, placed on each side of the head, a little behind the middle of a pale ashy-grey. Thorax oblong; the anterior margin transverse or very slightly arched; the sides of the thorax nearly parallel; the metathorax convex and rounded behind. Abdomen: the first node petiolated, the petiole short, with a compressed tooth at the extreme base beneath, somewhat pear-shaped and flattened above; the second node subglobose.

Hab. Port Natal.

Genus 10. DACETON.

Formica, pt., *Latr. Hist. Nat. Fourm.* 244 (1802).
Atta, pt., *Guér. Icon. Règ. Anim.* 421 (1835-8).

1. DACETON ARMIGERUM.

Formica armigera, *Latr. Hist. Nat. Fourm.* 244. 9. f. 58 ♂.

Atta armigera, Guér. *Icon. Règ. Anim.* 421. pl. 69. f. 2 ♂.

Daceton armigerum, Perty, *Del. An. Art.* 136. t. 27. f. 5.

Smith, Trans. Ent. Soc. new ser. ii. 217 ♂ ♀ ♂, pl. 21.
f. 7 ♂, 8 ♀.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

Genus 11. ORECTOGNATHUS.

Orectognathus, *Smith, Trans. Ent. Soc. new ser.* ii. 227 (1852-53).

1. ORECTOGNATHUS ANTENNATUS.

Orectognathus antennatus, *Smith, Trans. Ent. Soc. new ser.* ii. 228. pl. 21. f. 9.

Hab. New Zealand.

Subfam. 3. ATTIDÆ.

The number of joints in the maxillary palpi varying from 4 to 2, those of the labial palpi from 3 to 2; the ocelli usually obsolete in the workers, some species of the large workers furnished with a single ocellus; the petiole of the abdomen formed of two nodes, females and workers having a sting. The colonies of the different genera and species consisting of males, females, large and small workers; the large workers with enormously enlarged heads, those of the small workers of the ordinary size.

Genus 1. ATTA.

Formica, pt., *Linn. Syst. Nat.* i. 962 (1766).

Atta, *St. Farg. Hym.* i. 173 (nec *Fabr.*) (1836).

Myrmica, pt., *Nyl. Form. Fr. et d'Algér.* 83 (1856).

Aphenogaster, *Mayr. Form. Austr.* 194 (1855).

Maxillary palpi 4-jointed, labial palpi 3-jointed; antennæ 12-jointed in the female and worker, 13-jointed in the male. Wings longer than the body, with one marginal and three submarginal cells, the third sometimes incomplete; the second submarginal cell bell-shaped, the nervure at its apex uniting with that at the base of the marginal cell. Abdomen with two nodes in the petiole; the large workers usually with enormously developed heads, the small workers with heads of the ordinary size. Pl. IX. fig. 24.

It is very probable, that were the palpi of all the species included in this catalogue examined, they would not agree in the number of joints given in the generic characters of *Atta*, and at a future time it may be necessary to remove some into the genus *Solenopsis*, or to establish new genera for their reception; it will

be observed that in many instances only one sex has been examined, and frequently only single examples; we have therefore included in the present genus all those forms which appear to have a close relationship to the type, *Formica barbara* of Linnaeus.

Species of Europe.—Sp. 1–4.

1. ATTA BARBARA.

B.M

Formica barbara, Linn. *Syst. Nat.* i. 962. 2 ♂ (var.).

Fabr. Syst. Ent. 393. 11; *Ent. Syst.* ii. 356. 26; *Syst. Piez.* 403. 30.

Oliv. Encycl. Méth. vi. 495. 23.

Latr. Hist. Nat. Fourm. 262.

Formica binodia, *Fabr. Syst. Piez.* 405. 39.

Oliv. Encycl. Méth. vi. 496. 27.

Latr. Hist. Nat. Fourm. 285.

Formica juvenilis, *Fabr. Syst. Piez.* 405. 38.

Myrmica capitata, *Losana, Form. Piem.* 325.

Nyl. Form. Fr. et d'Algér. 83. 9.

Formica capitata, *Latr. Hist. Nat. Fourm.* 234. pl. 10. f. 66.

Atta capitata, *St. Farg. Hym.* i. 173. 1.

Lucas, Explo. Sc. de l'Algér. iii. 300. 329.

Mayr. Form. Austr. 190. 2; *Ungar. Ameis.* 21. 1.

Hab. France; Germany; Austria; Hungary; Dalmatia; Italy; Sardinia; Sicily.

2. ATTA STRUCTOR.

B.M

Formica structor, *Latr. Hist. Nat. Fourm.* 236.

Formica lapidum, *Fabr. Syst. Piez.* 407. 49 ♂.

Formica rufitarsis, *Fabr. Syst. Piez.* 406. 45 ♀.

Atta structor, *St. Farg. Hym.* i. 174. 2.

Schenck, Besch. Nass. Ameis. 113.

Mayr. Form. Austr. 192. 3; *Ungar. Ameis.* 22. 2.

Formica ædificans, *Schill. Bemerk. üb. die in Schles.* 56.

Myrmica mutica, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Es* 39. 6; *Form. Fr. et d'Algér.* 85. 10.

Hab. France; Germany; Austria; Hungary; Dalmatia; Switzerland; Italy.

3. ATTA SUBTERRANEA.

B.M

Formica subterranea, *Latr. Hist. Nat. Fourm.* 219. pl. 10. f. 64 pl. 11. f. 70.

Schill. Bemerk. üb. die in Schles. 55.

mica subterranea, Schenck, *Beschr. Nass. Ameis.* 110.

Nyl. Form. Fr. et d'Algér. 85.

subterranea, Mayr. *Form. Austr.* 188. 1.

. France ; Germany ; Switzerland.

ATTA PALLIDA.

B.M.

mica pallida, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.*

l. 10 ; *Form. Fr. et d'Algér.* 86 (note).

. Messina.

Species of Asia.—Sp. 5–14.

ATTA MINUTA.

minuta, Jerdon, *Madr. Journ. Lit. & Sc.* 105 ; *Ann. & Mag.*

Nat. Hist. 2nd ser. xiii. 47. 1 (1854).

b. India (Carnatic).

ATTA DESTRUCTA.

destructa, Jerdon, *Madr. Journ. Lit. & Sc.* 105 (1851) ;

Ann. & Mag. Nat. Hist. 2nd ser. xiii. 47. 2 (1854).

b. India.

ATTA DOMICOLA.

a domicola, Jerdon, *Madr. Journ. Lit. & Sc.* 106 (1851) ;

Ann. & Mag. Nat. Hist. 2nd ser. xiii. 47. 3 (1854).

b. India (Nellore).

ATTA RUFA.

a rufa, Jerdon, *Madr. Journ. Lit. & Sc.* 106 (1851) ; *Ann. &*

Mag. Nat. Hist. 2nd ser. xiii. 48. 4 (1854).

b. India.

ATTA FLORICOLA.

a floricola, Jerdon, *Madr. Journ. Lit. & Sc.* 107 (1851) ; *Ann.*

& Mag. Nat. Hist. 2nd ser. xiii. 49. 6 (1854).

b. India (Tellicherry).

. ATTA INSTABILIS.

B.M.

Worker. Length 3–3½ lines.—Head ferruginous, thorax and
 abdomen more or less obscurely so ; abdomen black and shining.

Head large, wider than the thorax or abdomen, finely longitudinally strigose; the mandibles striated, their teeth and margins black; the eyes and antennæ black, the latter sometimes suffused with ferruginous, the tip of the scape ferruginous. Thorax striated obliquely so at the sides, and transversely so above; the metathorax with a broad deep longitudinal channel, which is transversely striated, not spined. Abdomen ovate, the nodes of the petiole rugose; the entire insect thinly sprinkled with pale pubescence.

Male. Length $3\frac{1}{2}$ –4 lines.—Black and shining, pubescent; the tips of the antennæ and the apical joints of the tarsi pale rufotestaceous. Head small, much narrower than the thorax, eyes prominent; the wings colourless and iridescent, with the nervure rufotestaceous, the stigma darkest. Abdomen very black and shining.

Hab. Northern India.

11. ATTA BELLICOSA.

B.M.

Worker. Length 3 lines.—Ferruginous and shining; head very large, deeply emarginate behind, and with a central longitudinal channel; the clypeus smooth and shining; the face longitudinally striated anteriorly, the head behind transversely so; the mandibles very stout, their inner margins smooth and black with a single notch at their apex, striated at their base and apex and punctured in the middle. Thorax, legs and base of the abdomen rather paler than the head; the former rounded in front, narrowed behind, and deeply strangled between the meso- and metathorax, the latter armed with two acute spines.

Worker minor.—Only differs in being smaller, in having the mandibles toothed on their inner edge, in the head being smaller behind, and in being altogether of a paler colour.

Hab. Birmah.

12. ATTA PENETRANS.

B.M.

Female. Length 4 lines.—Head and thorax black and shining, abdomen dark rufopiceous. Head longitudinally striated; the mouth, clypeus and antennæ ferruginous. Thorax elongate-ovate; the prothorax in front and the legs ferruginous, the sternum on the disk intermixed with oblong punctures, a smooth impunctate line in the middle of the thorax in front; the metathorax truncate, the truncation smooth and shining; the wings subhyaline, with a fuscous line along the costal nervure, the apical margin of the wings with a fringe of fine white hairs. Abdomen

apical margins of the segments rufo-piceous, the nodes of the peduncle globose and punctured.

ab. Borneo (Sarawak). (Coll. A. R. Wallace.)

5. ATTA CINGULATA.

Worker major. Length $1\frac{3}{4}$ line.—Ferruginous. Head very large, thrice the width of the thorax; the antennæ pale ferruginous; eyes very small, placed a little before the middle, at the sides of the head. Thorax much swollen in front, much narrowed behind, with two short acute spines on the metathorax; legs pale rufo-testaceous. Abdomen ovate, the base truncated; a fuscous ring round the middle; the nodes of the peduncle globose.

ab. Borneo (Sarawak). (Coll. A. R. Wallace.)

6. ATTA NODIFER.

B.M.

Worker minor. Length $1\frac{1}{4}$ line.—Rufo-testaceous, and entirely smooth and shining: the mandibles, antennæ, articulations of the legs and the tarsi, pale testaceous; the thorax, nodes and base of the abdomen rather paler than the head; the thorax narrowed behind, and deeply strangled between the meso- and metathorax, the latter having two minute acute spines; the antennæ and legs pubescent, and a few longer hairs thinly scattered over the head, thorax and abdomen; the first node of the peduncle small and subconical, the second as wide as the metathorax, and globose.

ab. North China.

Species of Africa, Australia, and New Zealand.—Sp. 15–21.

5. ATTA TESTACEO-PILOSA. Pl. IX. figs. 25, 26.

Myrmica testaceo-pilosa, Lucas, *Explo. Sc. de l'Algér.* iii. 300.

Nyl. Form. Fr. et d'Algér. 86. 12.

phenogaster similis, Mayr. *Form. Austr.* 194. 1.

ab. Algeria; Sicily; Austria; Dalmatia; Sardinia.

6. ATTA SCALPTURATA.

Myrmica scalpturata, *Nyl. Form. Fr. et d'Algér.* 83. 8.

ab. Algeria. (Coll. Dr. Sichel.)

7. ATTA HOSTILIS.

B.M.

Worker. Length $1\frac{1}{4}$ line.—Ferruginous, with the abdomen fuscous, or sometimes black; the thorax, legs and antennæ paler

Head large, wider than the thorax or abdomen, finely longitudinally strigose; the mandibles striated, their teeth and margins black; the eyes and antennæ black, the latter sometimes fuscous-ferruginous, the tip of the scape ferruginous. Thorax striated obliquely so at the sides, and transversely so above; the metathorax with a broad deep longitudinal channel, which is transversely striated, not spined. Abdomen ovate, the nodes of the petiole rugose; the entire insect thinly sprinkled with pale pubescence.

Male. Length $3\frac{1}{2}$ –4 lines.—Black and shining, pubescent: the tips of the antennæ and the apical joints of the tarsi pale rufo-testaceous. Head small, much narrower than the thorax, eyes prominent; the wings colourless and iridescent, with the nervures rufo-testaceous, the stigma darkest. Abdomen very black and shining.

Hab. Northern India.

11. ATTA BELLICOSA.

B.M.

Worker. Length 3 lines.—Ferruginous and shining: head very large, deeply emarginate behind, and with a central longitudinal channel; the clypeus smooth and shining; the face longitudinally striated anteriorly, the head behind transversely so: the mandibles very stout, their inner margins smooth and black with a single notch at their apex, striated at their base and apex and punctured in the middle. Thorax, legs and base of the abdomen rather paler than the head; the former rounded in front narrowed behind, and deeply strangulated between the meso- and metathorax, the latter armed with two acute spines.

Worker minor.—Only differs in being smaller, in having the mandibles toothed on their inner edge, in the head being smooth behind, and in being altogether of a paler colour.

Hab. Birmah.

12. ATTA PENETRANS.

B.M.

Female. Length 4 lines.—Head and thorax black and shining, abdomen dark rufo-piceous. Head longitudinally striated; the mouth, clypeus and antennæ ferruginous. Thorax elongate-ovate; the prothorax in front and the legs ferruginous, the striae on the disk intermixed with oblong punctures, a smooth impunctate line in the middle of the thorax in front; the metathorax truncate, the truncation smooth and shining; the wings subhyaline, with a fuscous line along the costal nervure, the apical margins of the wings with a fringe of fine white hairs. Abdomen

the apical margins of the segments rufo-piceous, the nodes of the peduncle globose and punctured.

Tab. Borneo (Sarawak). (Coll. A. R. Wallace.)

3. ATTA CINGULATA.

Worker major. Length $1\frac{3}{4}$ line.—Ferruginous. Head very large, thrice the width of the thorax; the antennæ pale ferruginous; eyes very small, placed a little before the middle, at the sides of the head. Thorax much swollen in front, much narrowed behind, with two short acute spines on the metathorax; legs pale rufo-testaceous. Abdomen ovate, the base truncated; a fuscous ring round the middle; the nodes of the peduncle globose.

Tab. Borneo (Sarawak). (Coll. A. R. Wallace.)

4. ATTA NODIFER.

B.M.

Worker minor. Length $1\frac{1}{4}$ line.—Rufo-testaceous, and entirely smooth and shining: the mandibles, antennæ, articulations of the legs and the tarsi, pale testaceous; the thorax, nodes and base of the abdomen rather paler than the head; the thorax narrowed behind, and deeply strangulated between the meso- and metathorax, the latter having two minute acute spines; the antennæ and legs pubescent, and a few longer hairs thinly scattered over the head, thorax and abdomen; the first node of the petiole small and subconical, the second as wide as the metathorax, and globose.

Tab. North China.

Species of Africa, Australia, and New Zealand.—Sp. 15-21.

5. ATTA TESTACEO-PILOSA. Pl. IX. figs. 25, 26.

Myrmica testaceo-pilosa, Lucas, *Explo. Sc. de l'Algér.* iii. 300.

Nyl. Form. Fr. et d'Alger. 86. 12.

Aphenogaster similis, Mayr. *Form. Austr.* 194. 1.

Tab. Algeria; Sicily; Austria; Dalmatia; Sardinia.

6. ATTA SCALPTURATA.

Myrmica sculpturata, Nyl. *Form. Fr. et d'Algér.* 83. 8.

Tab. Algeria. (Coll. Dr. Sichel.)

7. ATTA HOSTILIS.

B.M.

Worker. Length $1\frac{1}{4}$ line.—Ferruginous, with the abdomen fuscous, or sometimes black; the thorax, legs and antennæ paler

than the head, slightly pubescent. Head enormously large, shining, deeply emarginate behind, with a central longitudinal channel, the face striated anteriorly; the mandibles very stout, their inner margin not toothed. Thorax rounded in front, narrowed behind, and deeply strangled between the meso- and metathorax, the latter with two minute acute spines. Abdomen ovate.

Female. Length $3\frac{1}{4}$ lines.—Fusco-ferruginous and shining; the head ferruginous and longitudinally striated; the legs and antennæ pale; wings subhyaline and iridescent, the nervures pale testaceous, the metathorax with two short acute spines.

Hab. Port Natal.

18. ATTA SPINODA.

B.M.

Female. Length 4 lines.—Black and shining, with the antennæ, mandibles, legs, head and thorax beneath, ferruginous; the vertex and the nodes of the peduncle obscure ferruginous; the head longitudinally striated. Thorax impunctate; the metathorax transversely striated, and armed with two short stout acute spines. Abdomen elongate, with the apical margins of its segments more or less rufo-piceous; the second node of the peduncle produced on each side into a short acute spine.

Hab. Australia (Adelaide).

19. ATTA VIGILANS.

B.M.

Worker. Length 2 lines.—Ferruginous, with the abdomen fuscous, and its base more or less pale. Head very largely developed, oblong, with a deep emargination behind, and a central longitudinal channel extending to the clypeus; the posterior half of the head, the clypeus and mandibles, smooth and shining, the latter with a few scattered punctures; the anterior margin of the face and the inner margin of the mandibles blackish; the anterior half of the face striated. Thorax smooth and shining; deep strangulation between the meso- and metathorax, the latter with two short acute spines. Abdomen ovate and slightly pubescent.

Hab. Australia (Melbourne).

20. ATTA ANTIPODUM.

B.M.

Female. Length 6 lines.—Black and shining: head small, much narrower than the thorax, roughly punctured, running into striæ on the anterior portion of the face; the mandibles stout and strongly punctured; the flagellum and legs ferru-

ous. Thorax ovate, finely and sparingly punctured; the first ode emarginate above, the second transverse; wings ample, abhyaline, yellowish at their base, the nervures pale rufo-testaceous, the stigma fuscous. Abdomen oblong, with the margins of the segments slightly depressed, and thinly sprinkled, as well as the head, thorax and legs, with short pale glittering hairs.

Hab. Australia (Swan River).

1. ATTA ANTARCTICA.

B.M.

Formica antarctica, White, *Zool. Erebus & Terror*, pt. 2.

Female. Length $3\frac{1}{2}$ lines.—Ferruginous: head narrower than the thorax; the antennæ dark fusco-ferruginous, with the basal joints of the flagellum and the apex of the scape ferruginous. Thorax: a black stripe on each side of the disk of the mesothorax, and an abbreviated central one in front; the sutures of the scutellum, post-scutellum, and a patch on each side of the pectus, black; the legs more or less nigro-piceous, with the articulations and the tarsi pale. The abdomen with a black fascia on the apical margins of all the segments.

Hab. New Zealand.

Species of South America.—Sp. 22-29.

22. ATTA FABRICATOR.

Worker major. Length $1\frac{1}{2}$ line.—Head and thorax ferruginous; the abdomen, nodes of the petiole, the femora and tibiæ, nearly black, the tarsi pale rufo-testaceous. The head very large, emarginate behind, with the anterior portion finely striated, the vertex being smooth and shining. Thorax narrowed behind, and armed on the metathorax with two minute upright spines.

Worker minor.—Rather smaller than the large worker, of a more slender form; the head of an ordinary size, and entirely pale rufo-testaceous, and very smooth and shining; the abdomen rather darker than the head and thorax.

Female. Length $3\frac{1}{2}$ lines.—The head, thorax and legs pale rufo-testaceous; the disk of the thorax with three longitudinal fuscous stripes; the margins of the scutellum and the base of the metathorax fuscous; the femora and tibiæ fuscous, with their base and apex pale; the abdomen and nodes of the petiole nearly black, the former at its extreme base, and the latter beneath, pale.

Male.—Nearly as large as the female, jet-black, smooth and

shining; the antennæ, articulations of the legs, and the tarsi pale; wings hyaline and iridescent, with the nervures pale testaceous.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

23. ATTA RUBRA.

B.M.

Female. Length 4 lines.—Deep reddish-brown: the legs paler than the body, with the femora blackish in the middle. The head longitudinally striated, the mandibles smooth and shining. Thorax: the disk very finely and regularly striated, the scutellum shining, the metathorax armed with two short acute spines. Abdomen elongate-ovate; the basal segment opaque, the following smooth and shining, with their apical margins rufo-testaceous.

Hab. Brazil (Petropolis). (Coll. Rev. Hamlet Clark.)

24. ATTA TESTACEA.

B.M.

Worker major. Length 2 lines.—Rufo-testaceous: the head very large, the sides rounded, deeply emarginate behind, with a central, deep, longitudinal channel extending to the clypeus; the face anteriorly coarsely and irregularly striated; the antennæ and legs paler than the head. The thorax deeply stragulated between the meso- and metathorax, the latter having two minute upright acute spines. The abdomen ovate, with the base truncate.

Worker minor.—Length, a little over a line, of a slender form; the head of ordinary size, the antennæ longer than in the large worker; entirely smooth and shining, with the abdomen dusky.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

25. ATTA DILIGENS.

B.M.

Worker major. Length $1\frac{1}{2}$ line.—Pale reddish-yellow, with the abdomen slightly fuscous, the head and thorax opaque, the abdomen shining. The head very large, the sides rounded, deeply emarginate behind, with a central longitudinal channel extending to the clypeus; the latter, as well as the mandibles, smooth and shining; the inner margin of the mandibles black. The divisions between the pro-, meso- and metathorax strongly marked, the latter with two short acute spines.

Worker minor.—About a line in length, slender, and having the head of ordinary size; the head and abdomen more or less fuscous.

Hab. Brazil (Villa Nova).

26. *ATTA NIGRIVENTRIS*.

B.M.

Worker minor. Length 1 line.—The head and thorax ferruginous; the abdomen and legs black, entirely smooth and shining; the antennæ fuscous; the articulations of the legs and the tarsi pale ferruginous. The thorax with a deep strangulation between the meso- and metathorax, the latter with two minute upright spines.

Hab. Brazil (Rio).

27. *ATTA PILIVENTRIS*.

Female. Length $2\frac{1}{2}$ lines.—Black: the face anteriorly and the mandibles ferruginous; the apex of the flagellum and the tarsi pale testaceous. Head the same width as the thorax, slightly emarginate behind, and irregularly longitudinally striated. Thorax: the disk very closely and finely striated; the scutellum smooth and shining; the metathorax finely rugose. Abdomen ovate, and covered with fine pale silky pubescence; the head and thorax slightly pubescent.

Hab. Brazil (Tejuca). (Coll. Rev. Hamlet Clark.)

28. *ATTA FUMIPENNIS*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Pale ferruginous and opaque, with the scape, basal joints of the flagellum, and the legs pale; the apical joints of the antennæ and the margins of the mandibles dusky. The head and thorax very evenly and delicately striated; the wings smoky, palest at their base, with the nervures fuscous; the second and following segments of the abdomen shining.

Worker. Length $1\frac{1}{2}$ line.—Pale rufo-testaceous, not shining: head oblong-ovate, with the mandibles bent, and very acute at their apex, their inner margin furnished with acute teeth; the thorax narrowed, and nearly parallel behind the prothorax; the metathorax armed with two upright acute spines. Abdomen ovate, truncate at the base, and more or less fuscous at the apex.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

29. *ATTA BISPINOSA*.

Atta bispinosa, *Spin. Faun. Chili*, vi. 244 ♂.

Hab. Chili.

Species of Mexico and Georgia.—Sp. 30, 31.

30. *ATTA CLYPEATA*.

B.M.

Female. Length 3 lines.—Rufo-ferruginous, shining, and

shining; the antennæ, articulations of the legs, and the tarsi, pale; wings hyaline and iridescent, with the nervures pale testaceous.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

23. ATTA RUBRA.

B.M.

Female. Length 4 lines.—Deep reddish-brown: the legs paler than the body, with the femora blackish in the middle. The head longitudinally striated, the mandibles smooth and shining. Thorax: the disk very finely and regularly striated, the scutellum shining, the metathorax armed with two short acute spines. Abdomen elongate-ovate; the basal segment opaque, the following smooth and shining, with their apical margins rufo-testaceous.

Hab. Brazil (Petropolis). (Coll. Rev. Hamlet Clark.)

24. ATTA TESTACEA.

B.M.

Worker major. Length 2 lines.—Rufo-testaceous: the head very large, the sides rounded, deeply emarginate behind, with a central, deep, longitudinal channel extending to the clypeus: the face anteriorly coarsely and irregularly striated; the antennæ and legs paler than the head. The thorax deeply stragulated between the meso- and metathorax, the latter having two minute upright acute spines. The abdomen ovate, with the base truncate.

Worker minor.—Length, a little over a line, of a slender form. the head of the ordinary size, the antennæ longer than in the large worker; entirely smooth and shining, with the abdomen dusky.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

25. ATTA DILIGENS.

B.M.

Worker major. Length $1\frac{1}{2}$ line.—Pale reddish-yellow, with the abdomen slightly fuscous, the head and thorax opaque, the abdomen shining. The head very large, the sides rounded, deeply emarginate behind, with a central longitudinal channel extending to the clypeus; the latter, as well as the mandibles, smooth and shining; the inner margin of the mandibles black. The divisions between the pro-, meso- and metathorax strongly marked, the latter with two short acute spines.

Worker minor.—About a line in length, slender, and having the head of ordinary size; the head and abdomen more or less fuscous.

Hab. Brazil (Villa Nova).

26. *ATTA NIGRIVENTRIS*.

B.M.

Worker minor. Length 1 line.—The head and thorax ferruginous; the abdomen and legs black, entirely smooth and shining; the antennæ fuscous; the articulations of the legs and the tarsi pale ferruginous. The thorax with a deep strangulation between the meso- and metathorax, the latter with two minute upright spines.

Hab. Brazil (Rio).

27. *ATTA PILIVENTRIS*.

Female. Length $2\frac{1}{2}$ lines.—Black: the face anteriorly and the mandibles ferruginous; the apex of the flagellum and the tarsi pale testaceous. Head the same width as the thorax, slightly emarginate behind, and irregularly longitudinally striated. Thorax: the disk very closely and finely striated; the scutellum smooth and shining; the metathorax finely rugose. Abdomen ovate, and covered with fine pale silky pubescence; the head and thorax slightly pubescent.

Hab. Brazil (Tejuca). (Coll. Rev. Hamlet Clark.)

28. *ATTA FUMIPENNIS*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Pale ferruginous and opaque, with the scape, basal joints of the flagellum, and the legs pale; the apical joints of the antennæ and the margins of the mandibles dusky. The head and thorax very evenly and delicately striated; the wings smoky, palest at their base, with the nervures fuscous; the second and following segments of the abdomen shining.

Worker. Length $1\frac{1}{2}$ line.—Pale rufo-testaceous, not shining: head oblong-ovate, with the mandibles bent, and very acute at their apex, their inner margin furnished with acute teeth; the thorax narrowed, and nearly parallel behind the prothorax; the metathorax armed with two upright acute spines. Abdomen ovate, truncate at the base, and more or less fuscous at the apex.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

29. *ATTA BISPINOSA*.

Atta bispinosa, *Spin. Faun. Chili*, vi. 244 ♂.

Hab. Chili.

Species of Mexico and Georgia.—Sp. 30, 31.

30. *ATTA CLYPEATA*.

B.M.

Female. Length 3 lines.—Rufo-ferruginous, shining, and

pubescent. Head subquadrate, emarginate behind, and having a deep central longitudinal channel; the ocelli large and prominent; the clypeus concave, its anterior angles produced, forming two acute points; the mandibles dark ferruginous, coarsely striated, and armed with three acute teeth at their apex. Thorax ovate, very smooth and shining on the disk. Abdomen ovate, truncate at the base; the nodes of the petiole transverse, the first produced into a point in the middle of its upper margin.

The male is about the same size as the female, the thorax rufo-testaceous, the legs and antennæ pale testaceous, the head and abdomen dark fuscous, the mandibles and palpi pale testaceous. The clypeus prominent, the ocelli very large; wings hyaline, with the nervures pale testaceous; the nodes of the peduncle compressed and transverse; the upper margin of the first node emarginate.

Hab. Mexico.

Of three examples received, not two agree in colouring: the specimen described I take to be the usual appearance of the insect; the second has the head anteriorly, the tibiæ and tarsi ferruginous, the rest of the body black; the third variety is black, with only a faint tinge of red on the face and mandibles.

31. ATTA CRUDELIS.

B.M.

Female. Length 6 lines.—Ferruginous, with the apex of the abdomen more or less fuscous. Head very large, much wider than the thorax, longitudinally striated, the striæ diverging laterally on the vertex; mandibles very stout, strongly striated, and armed with a number of stout acute teeth; the anterior margin of the face, the mandibles beneath, and the cheeks, fringed with long pale yellow hairs. Thorax subglobose; the disk and the scutellum longitudinally striated, the metathorax transversely so: the wings subhyaline, the nervures testaceous, the stigma fuscous, the legs with glittering pale pubescence. The first node of the peduncle oblong and transversely striated, the second subglobose, and also striated transversely; the apical margins of the segments of the abdomen fringed with long glittering white hairs.

Worker major.—Rather smaller than the female, the head larger, and the thorax elongate, slightly narrowed behind, but the head, thorax, and nodes of the peduncle similarly striated; the mandibles shorter, stouter, black, and without teeth; the cheeks have similar fringes of long hair, and the insect is sprinkled over with short glittering pale hairs, like the female.

Hab. Georgia.

Genus 2. *PHYSATTA*.

Head small; eyes of moderate size, placed a little above the middle of the head; ocelli in a triangle on the vertex; mandibles stout, and denticulate at the apex; antennæ short, not so long as the head and thorax; the scape nearly as long as the flagellum, slightly thickened at the apex; flagellum subclavate, 6-jointed, the first joint shorter than the second, the third, fourth and fifth about the same length as the first, the apical joint the length of the two basal ones. Maxillary palpi 3-jointed, the basal and apical joints of about equal length, the intermediate joint twice the length of the apical one, the latter obliquely truncate at the apex. Labial palpi 3-jointed, the two basal joints clavate, the apical one fusiform. Thorax subglobose; anterior wings with one marginal and two submarginal cells, the first submarginal cell about the length of the stigma, the second extending to the apex of the wing, with one subtriangular discoidal cell; the tibiæ armed with a single spur at their apex. Abdomen globose, pedunculated, the peduncle with two nodes.

This genus in one of its most prominent characteristics agrees with the genus *Heptacondylus*, both having seven-jointed antennæ; the wings, however, have a totally different neurulation, and this character is perhaps of paramount importance in constructing generic divisions for the Formicidæ.

1. *PHYSATTA DROMEDARIUS*. Pl. X. figs. 9-11. B.M.

Female. Length $6\frac{1}{2}$ lines.—The head, thorax, legs, and petiole of the abdomen, ferruginous; the mandibles with four or five black teeth; the head and thorax longitudinally striated, and clothed, as well as the legs, with a thin erect fulvous pubescence; wings dark fuscous; the metathorax with a stout tooth on each side; the truncation transversely striated. Abdomen black; the nodes subglobose, the first attached to the thorax by a short stout petiole, and covered with erect fuscous pubescence. *Hab.* Borneo (Sarawak).

2. *PHYSATTA CRINITA*. B.M.

Female. Length 5 lines.—Ferruginous: the disk of the thorax obscurely so; the abdomen deep fusco-ferruginous; the entire insect thinly covered with pale ferruginous pubescence. The head coarsely rugose; the mesothorax smooth in front, but with deep longitudinal striæ towards the scutellum; the scutellum very prominent and roughly sculptured; the metathorax

with two short stout spines; wings wanting. Abdomen subglobose, the base slightly emarginate.

Hab. India (Madras). (Coll. Walter Elliott, Esq.)

3. *PHYSATTA GIBBOSA*.

Female. Length 4 lines.—Head, thorax, and nodes of the peduncle ferruginous; the abdomen, legs and antennæ black; the legs with a very obscure ferruginous tint, the tips of the joints brighter; the tips of the joints of the antennæ rufopiceous; the head and thorax longitudinally rugulose; the head, thorax, legs and antennæ thinly clothed with black pubescence; the thorax subglobose, very convex above; the scutellum prominent; the metathorax terminating in two stout spines; the wings dark fuscous. Abdomen globose and shining, thinly sprinkled with black hairs; the nodes of the peduncle subglobose, the first scarcely larger than the second.

Hab. Java. (Coll. East India House.)

4. *PHYSATTA NATALENSIS*.

B.M.

Female. Length 5 lines.—Head, thorax, and nodes of the abdomen bright ferruginous; the antennæ, legs and abdomen very dark fusco-ferruginous; the mesothorax with three fuscous stripes, the central one abbreviated. The head coarsely rugose; the prothorax transversely striated, the striæ delicate and irregular; the mesothorax and scutellum longitudinally striated, the latter very convex and prominent; the metathorax with two stout spines; the wings fuscous; the nodes of the peduncle globose, and of equal size; the entire insect thinly sprinkled with short pale hairs.

Hab. Port Natal.

Genus 3. *PHEIDOLE*.

Pheidole, *Westw. Ann. & Mag. Nat. Hist.* vi. 87 (1841).

Œcophthora, *Heer, Ueber die Hausameise Madeir.* (1852).

Head large in the worker major, of moderate size in the other sexes. Mandibles very strong, the inner edge oblique, without teeth in the large worker, toothed in the small worker. Maxillary palpi 2-jointed; labial palpi 2-jointed. Antennæ 12-jointed in the females, large and small workers. Thorax narrower than the head, much more so in the large workers. Wings with two complete submarginal cells, and one complete discoidal cell; the metathorax usually with two short spines. The anterior tibiae

in the females, large and small workers, with a pectinate spine at their apex.

We have compared numerous examples of *Æcophthora* with specimens of *Pheidole providens*, and cannot find the differences mentioned by Professor Heer; there is no difference in the relative length of the first joint of the tarsus; the mandibles are equally acute at their apex; in all generic characters they precisely correspond. We have not seen the males of either of the types, but as other sexes agree in every particular, we have included in one genus all such species as possess the characters above given.

1. PHEIDOLE PUSILLA. Pl. IX. figs. 18-20. B.M.

Æcophthora pusilla, Heer, *Ueber die Hausameise Madeira's*, 1852; *Ann. & Mag. Nat. Hist.* ser. 2. xvii. 225 (1856).

Hab. Madeira.

2. PHEIDOLE PROVIDENS.

Atta providens, Sykes, *Trans. Ent. Soc. Lond.* i. 103. pl. 13. f. 5, 5 a-d ♂.

Pheidole providens, Westw. *Ann. & Mag. Nat. Hist.* vi. 87 (1841).

Æcodoma providens, Jerdon, *Madr. Journ. Lit. & Sc.* 108 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 50. 8 (1854).

Hab. India (Poona).

3. PHEIDOLE PALLIDULA.

Myrmica pallidula, Nyl. *Addit. Alt. Adno. Mon. Form. Bor. Eur.* 42; *Form. Fr. et d'Algér.* p. 97.

Æcophthora subdentata, Mayr. *Einige neue Ameis.* 143.

Æcophthora pallidula, Mayr. *Form. Austr.* 183. 1.

Hab. Europe.

4. PHEIDOLE MALABARICA.

Æcodoma malabarica, Jerdon, *Madr. Journ. Lit. & Sc.* 107 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 49 (1854).

Hab. India.

5. PHEIDOLE DIFFUSA.

Æcodoma diffusa, Jerdon, *Madr. Journ. Lit. & Sc.* 109 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 51. 9 (1854).

Hab. India.

6. PHEIDOLE DIVERSA.

Ecodoma diversa, Jerdon, *Madr. Journ. Lit. & Sc.* 109 (1851);
Ann. & Mag. Nat. Hist. ser. 2. xiii. 51. 10 (1854).

Hab. India (Wynaad).

7. PHEIDOLE AFFINIS.

Ecodoma affinis, Jerdon, *Madr. Journ. Lit. & Sc.* 110 (1851);
Ann. & Mag. Nat. Hist. ser. 2. xiii. 51. 11 (1854).

Hab. India (Malabar).

8. PHEIDOLE MINOR.

Ecodoma minor, Jerdon, *Madr. Journ. Lit. & Sc.* 110 (1851);
Ann. & Mag. Nat. Hist. ser. 2. xiii. 51. 12 (1854).

Hab. India (Tellicherry).

9. PHEIDOLE QUADRISPINOSA.

Ecodoma quadrispinosa, Jerdon, *Madr. Journ. Lit. & Sc.* 111 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 52 (1854).

Hab. India (Malabar).

10. PHEIDOLE OCELLIFERA.

B.M.

Worker. Length 6-6½ lines.—Dark chestnut-brown, shining; in some cases the abdomen is nearly black. Head very large, larger and wider than the abdomen; eyes small and ovate, placed before the middle at the sides; in a line with the eyes, in the middle of the face, is a single ocellus; a deeply impressed line extends from the vertex to the anterior margin of the face; the head longitudinally striated in front, the striation somewhat curved at the sides of the insertion of the antennæ, the striæ extending upwards, as high as the upper margin of the eyes in the middle of the front, and the entire length of the head at the sides and beneath; the vertex transversely striated, the striæ curving at the sides, and uniting with that which runs down the sides of the head, the head deeply emarginate behind; mandibles very stout, their inner edge smooth, not toothed; the pro- and metathorax transversely striated, the mesothorax and scutellum shining, with a few scattered punctures; the metathorax armed with two stout acute spines. Abdomen ovate, smooth and shining; the apical margins of the segments rufo-piceous, the nodes of the petiole incrassate, the first striated and notched above, the second node with the upper margin smooth and shining.

Hab. Birmah; Hong Kong; Philippine Islands.

11. PHEIDOLE JANUS. Pl. IX. figs. 13-17.**B.M.**

Worker major. Length 2 lines.—Head enormously enlarged, of a shining, obscure reddish-brown, deeply emarginate behind, and with a central deeply impressed line running forwards to the insertion of the antennæ; the anterior portion of the head and the mandibles striated, the latter very stout, their inner edge smooth, and with a single notch at their apex; the antennæ and legs pale rufo-testaceous, the thorax, nodes of the peduncle, and base of the abdomen, rather darker; the club of the antennæ 3-jointed, the thorax narrowed behind and armed with two short acute spines; the abdomen, except the base, fusco-ferruginous.

Worker minor. Length a little over a line.—Rather darker than the large worker, the antennæ longer, the head much smaller in proportion, with the mandibles denticulate on their inner margin; the body entirely smooth and shining.

Hab. Ceylon.

12. PHEIDOLE TAPROBANÆ.**B.M.**

Female. Length $6\frac{1}{2}$ lines.—Black, with obscure ferruginous tints on the face anteriorly, the sides of the thorax and nodes of the peduncle: the head longitudinally striated before the ocelli, and transversely striated on the vertex behind them; the clypeus smooth and shining, the mandibles shining and slightly punctured; the antennæ pale rufo-testaceous; the ocelli large, and of glassy brightness. Thorax ovate; the disk shining, with a few scattered punctures, obliquely striated at the sides anteriorly, and longitudinally so towards the scutellum, the latter smooth, shining and very convex; the metathorax truncate, the truncation transversely striated, the upper portion rugose and armed on each side with a short stout acute spine; the legs ferruginous. Abdomen ovate, smooth and shining; the first node of the peduncle, viewed sideways, is wedge-shaped, transversely striated and emarginate above, beneath, with a longitudinal central flattened appendage; the second node wider than the first, transverse, and narrowed towards the abdomen, its anterior margin smooth and shining.

Hab. Ceylon.

13. PHEIDOLE RUGOSA.**B.M.**

Worker. Length $3\frac{1}{2}$ lines.—Ferruginous and very pubescent: the head very large, deeply emarginate behind and with a deeply impressed central channel, extending to the anterior margin of the face; the head and thorax closely and coarsely punctured,

the latter narrowed behind, and deeply strangulated between the meso- and metathorax, the latter armed with two acute spines, and obliquely truncate. Abdomen ovate; the first segment with a number of fine longitudinal carinæ, which intermingle at its base, but run parallel at its apex; the following segments more faintly carinate.

Hab. Ceylon.

14. *PHEIDOLE SILENUS*.

B.M.

Worker. Length $2\frac{1}{4}$ –4 lines.—Obscure fusco-ferruginous, with the antennæ, articulations of the legs and the tarsi, pale rufo-testaceous. Head very large, nearly quadrate, with the hinder angles rounded, the posterior margin deeply emarginate, the face longitudinally striated, the hinder portion of the vertex transversely so, with a rugose space between these striations; the head beneath has a much finer longitudinal striation; the clypeus and mandibles shining, the latter punctured, with their base striated. Thorax rugose, with the scutellum elevated, forming an obtuse rounded tubercle; the anterior margin of the prothorax with a short obtuse tooth at its lateral angles, and the metathorax armed with two upright stout acute spines. Abdomen ovate and shining, the base delicately and closely striated, the nodes of the peduncle roughened.

Hab. Singapore.

This is probably one of those species which should fall into the genus *Solenopsis*, which has only two joints in the labial and maxillary palpi, and two joints in the club of the antennæ.

15. *PHEIDOLE COMATA*.

B.M.

Worker. Length $3\frac{1}{2}$ lines.—Fusco-ferruginous: the flagellum and legs pale rufo-testaceous. Head oblong-quadrate, deeply notched at the vertex, with a deep longitudinal channel extending to the base of the clypeus; the head longitudinally reticulate-striate, and enormously enlarged. Thorax narrowed behind, and armed with two short acute spines on the metathorax. Abdomen ovate and very delicately reticulated, with a number of little raised points, on each of which is a long pale hair; the head, thorax and legs thinly covered with long pale hairs.

Hab. Borneo (Sarawak).

16. *PHEIDOLE FERVENS*.

B.M.

Worker. Length 2 lines.—Ferruginous: the flagellum, legs, metathorax, and nodes of the abdomen, pale rufo-testaceous.

Head very largely developed, oblong, narrowest in front, deeply emarginate behind; the lateral angles rounded, and with a central channel extending to the base of the clypeus; the head is covered with fine elevated carinæ, between which are fine transverse reticulations; the carinæ are wide apart on the sides of the face, but much closer in the middle. The thorax finely roughened, with two short, erect, acute spines on the metathorax. Abdomen ovate; the extreme base pale rufo-testaceous.

Hab. Singapore.

This species closely resembles the *Pheidole pusilla*; the small worker is not more than a line in length, very smooth and shining, pale rufo-testaceous, with the abdomen fuscous; the legs and antennæ are more elongate than in the larger form, and the head is of ordinary size.

[7. PHEIDOLE CEPHALICA. Pl. IX. figs. 21-23. B.M.

Worker major. Length 3 lines.—Head black; thorax, legs and nodes of the peduncle ferruginous; abdomen fusco-ferruginous. Head enormously developed, deeply emarginate behind, with a central longitudinal channel extending to the base of the clypeus; the face striated and ferruginous anteriorly; the mandibles and antennæ ferruginous. The thorax narrowed behind, and armed with two short acute spines at the lateral angles of the verge of the truncation of the metathorax. Abdomen ovate.

Worker minor. Length 2 lines.—Head of the ordinary size, narrowed behind; the sides slightly fuscous; the insect otherwise ferruginous; the antennæ and legs more elongate than in the large worker, the thorax is also more elongate; the metathorax with two acute spines; the insect sprinkled over with short, erect, pale hairs.

Lab. Brazil (Tunantins).

Genus 4. SOLENOPSIS.

Solenopsis, Westw. *Ann. & Mag. Nat. Hist.* vi. 86 (1841).

Head very large, subquadrate, emarginate posteriorly, divided above by a longitudinal central impressed line; eyes small, lateral, placed before the middle. Antennæ 10-jointed, short and rather slender, inserted forwards on the head in two deep foveæ; the club consisting of two joints. Mandibles very stout, curved, their apex oblique, not toothed. The labial, and also the maxillary palpi, 2-jointed. Thorax much narrower than the head. Abdomen with two nodes at the base, the first compressed, its

margin rounded and entire; the second node subglobose; the abdomen ovate, with the base truncate.

The male and female not known.

The characters of this genus are nearly those of the genus *Ecophthora* with the exception of the number of joints of the antennæ, which is 10: in *Ecophthora* they are 12; in both genera the mandibles are without teeth in the large-headed individuals (soldiers). The club of the flagellum is only 2-jointed in the present genus: in *Ecophthora* it has 3 joints.

1. SOLENOPSIS MANDIBULARIS.

B.M.

Solenopsis mandibularis, *Westw. Ann. & Mag. Nat. Hist.* vi. 87. (1841), pl. 2. f. 5 ♂ a-5 o.

Hab. South America.

Genus 5. CAREBARA.

Carebara, *Westw. Ann. & Mag. Nat. Hist.* vi. 86 (1841).

Head small, much narrower than the thorax; eyes ovate, placed high on the sides of the head; antennæ short; the flagellum 9-jointed, the basal joint as long as the two following, the joints from the second, gradually increasing in length and thickness, not having a distinct club; mandibles short, stout, widening to their apex, which is oblique and dentate; *maxillary palpi* 3-jointed, *labial palpi* 2-jointed. Thorax ovate, very convex above; wings ample, the anterior pair with one marginal, two submarginal and one discoidal cell; the intermediate and posterior tibiæ destitute of spines at their apex, the anterior tibiæ with a single calcar or spine. Abdomen very large, ovate, much wider than the thorax.

The above characters are those of the female, the workers are not known.

1. CAREBARA LIGNATA. Pl. X. figs. 12-15.

Carebara lignata, *Westw. Ann. & Mag. Nat. Hist.* vi. 86 (1841) pl. 6. f. 6 ♀.

Hab. Java. (Coll. W. W. Saunders, Esq.)

The male of this species is in the collection of the East India House, it closely resembles the female, and is of a reddish-yellow with the wings dark fuscous; the antennæ yellow, elongate and 13-jointed.

2. CAREBARA CASTANEA.

B.M.

Female. Length $8\frac{1}{2}$ lines.—Dark chestnut-brown, smooth

shining, and sparingly and delicately punctured. Head small and more strongly punctured than the thorax; a deeply impressed line in front of the anterior ocellus, extending to the base of the clypeus, which is smooth, shining and convex, with its anterior margin rounded; the mandibles punctate-striate, with four or five black acute teeth; the antennæ and apical joints of the tarsi pale rufo-testaceous; the mesothorax with two central approximating lines anteriorly, which terminate a little before the middle of the disk, also a faintly impressed line opposite each tegula; wings smoky, nervures dark ferruginous. Abdomen large and ovate, the nodes of the petiole transverse, the anterior lateral angles of the second node acute.

Hab. Hong Kong.

This species very closely resembles *C. lignata*, but may be distinguished by its having the second node of the petiole widest anteriorly: the reverse is the characteristic of the typical insect.

3. CAREBARA VIDUA.

B.M.

Male. Length 7 lines.—Head, thorax and nodes of the petiole black; the antennæ, mandibles, legs and abdomen ochraceous, covered with a thin, short, pale pubescence, which is most dense on the head and thorax; the mesothorax with a central raised line anteriorly, and very closely punctured; wings brown, with the nervures dark ferruginous, the posterior wings palest. Abdomen oblong-ovate, slightly narrowed posteriorly; the first node of the abdomen, viewed above, rounded, the second transverse.

Hab. Port Natal.

The specimen described has its antennæ broken, but of one, eleven joints remain: I have little doubt of two being broken off.

4. CAREBARA DUX.

B.M.

Female. Length 10½ lines.—Black: the thorax and abdomen shining; the head closely and strongly punctured; the antennæ, mandibles and anterior margin of the clypeus ferruginous; the mandibles punctate-striate, with four stout acute teeth at their inner margin. Thorax: the disk with distant punctures; two impressed lines on the mesothorax anteriorly, in the centre, which unite and terminate in the middle of the disk, and a line on each side extending to the posterior margin; the wings brown, the posterior pair and apex of the anterior wings palest, the nervures ferruginous; the legs dark fusco-ferruginous, with the tarsi palest. Abdomen large, much wider than the thorax, finely and

sparingly punctured, the base of the second and third segments impunctate, the apical margins of the segments obscurely rufopiceous; the nodes of the petiole incrassate, the upper surface of the second node inclined obliquely forwards.

Hab. Port Natal.

Genus 6. ŒCODOMA.

Formica, pt., *Linn. Syst. Nat.* i. 964 (1766).

Atta, pt., *Fabr. Syst. Piez.* 421 (1804).

Œcodoma, *Latr. Nouv. Dict. d'Hist. Nat.* xxiii. (1818).

We are indebted to Mr. H. W. Bates for the following observations on the economy of the species of this genus; but notwithstanding these various communications, as well as other recorded histories, we are still at a loss for satisfactory information, such as would enable us to unite the various sets of workers with their legitimate parents; we are acquainted with three very distinct forms of males as well as females, but have no data whereby to connect these with the working communities.

DIVISION 1.

The first submarginal cell of unequal width, pointed at the base and transverse at the apex; the recurrent nervure received within the first submarginal cell near its apex.

1. ŒCODOMA CEPHALOTES. Pl. X. figs. 21-23. B.M.

Formica cephalotes, *Linn. Syst. Nat.* i. 964. 15 ♂, major.

Fabr. Syst. Ent. 395. 22; *Spec. Ins.* i. 493. 31; *Mant.* i. 310. 38; *Ent. Syst.* ii. 362. 52.

De Geer, Mem. Ins. iii. 604. 5. t. 31. f. 11 ♂.

Oliv. Encycl. Méth. vi. 499. 47.

Latr. Hist. Nat. Fourm. 222. pt. 9. f. 57. A.

Formica fervens, *Drury, Illust. Exot. Ins.* iii. t. 42. f. 4 ♀.

Formica migratoria, *De Geer, Ins.* iii. 604. 5. t. 31. f. 11 ♂.

Formica grossa, *Oliv. Encycl. Méth.* vi. 499. 35 ♀; *Fabr. Ent. Syst.* ii. 359. 40.

Atta cephalotes, *Fabr. Syst. Piez.* 421. 1 ♂.

Latr. Gen. Crust. et Ins. iv. 124.

Guér. Icon. Règ. Anim. iii. 422. 1.

Erichs. Faun. et Flo. Brit. Guiana, iii. 593.

Madame Merian, tab. 18; *Seba*, iv. t. 99. f. 6.

Hab. Brazil; Mexico.

"*Ecodoma cephalotes* is the common species of the genus; it is abundant in light soils, and especially cultivated grounds. Its formicaria are very extensive and wholly subterranean, the site being marked on the surface of the ground only by a mound of little elevation formed of earth, generally lighter in colour than the surrounding soil, raised in little ridges and turrets. The space occupied by the mound is always cleared of foliage; the entrances appear to be at a distance from the mounds, and consequently there must be a system of subterranean highways. The *Ecodomæ* appear to be exclusively herbivorous, and, like the *Cryptoceri*, have no stings; what they do with the immense amount of cut leaves they are perpetually conveying to their abode it is impossible to divine. Probably they prepare food for the larvæ from the leaves; but besides leaves and fruits, individuals in the processions may be frequently seen conveying dried twigs and leaves, and in rare instances, dried fragments of insects; what they especially delight in is the dried grain of the *Mandiocca* meal, the general food of the inhabitants of this country. This insect, from its ubiquity, immense numbers, eternal industry, and its plundering propensities, becomes one of the most important animals in Brazil; its immense hosts are unceasingly occupied in defoliating trees, and those most relished by them are precisely the useful and cultivated kinds; they have regular divisions of labourers: numbers mount the trees and cut off the leaves in irregularly rounded pieces about the size of a shilling, another relay of labourers carry them off as they fall; sometimes these latter get behindhand with their work, and the fallen pieces accumulate to a great heap; such heaps used to puzzle me when I met with them on first arriving in this country. I had thought *Ecodoma* exclusively herbivorous, but I on one occasion surprised one dragging off the dead body of a fine *Lamia* nearly an inch long."

The following remarks apply to the workers of the species which appears to be the *Ecodoma cephalotes* of authors; they certainly apply to that species of this catalogue:—

"I send you all the different sizes of this species taken from the formicarium. The medium-sized individuals were occupied in cutting pieces of leaf of the size of a sixpence. The minute individuals were few in number at the leaf-cutting operations, but were in vast numbers about the entrance to the dome of the formicarium: the very large-headed ones were not engaged in leaf-cutting, nor were they to be seen in the processions; they were only to be seen on disturbing the nest.

"I had observed during several months the workers of this species, at a place in the forest, occupied in cutting pieces of the foliage of trees, and always crossing the pathway in the same

direction along a fallen tree. I at length determined to trace the procession through the jungle to their formicarium; this I soon discovered; it was very different in appearance and much inferior in size to the vast mounds thrown up by the species found at Para and Santarem (*E. cephalotes*?). The dome of the nest of this species is only about a foot in diameter, and about the same in height; it is formed of light earth, matted and thatched as it were with pieces of leaves which the workers cut and carry. I watched the heavily-laden fellows as they came trooping in, and found they all deposited their load in a heap close to the mound. I then searched for the entrance to the interior; I found, after removing a little of the surface, three burrows, each about an inch in diameter; half a foot downwards all three united in one tubular burrow, about four inches in diameter; to the bottom of this I could not reach when I probed with a stick to the depth of four or five feet. The tube of the main burrow was perfectly smooth, and covered with a vast number of workers of much smaller size than those occupied in conveying the leaves: these minute individuals were unmixed with any of the larger size. Afterwards, on probing lower into the burrow, up came, one by one, several gigantic fellows, out of all proportion larger than the largest of those at work outside, and which I could not have supposed to belong to the same species. Besides the greatly enlarged size of the head, the sculpture of the body is very different, and what struck me as very curious, they have an ocellus in the middle of the forehead; this latter feature, added to their startling appearance from the cavernous depths of the formicarium, gave them quite a Cyclopean character. There are, however, individuals intermediate in size between these and the other workers."

An examination of the workers collected by Mr. Bates shows, that although the smaller workers differ in size, from two-tenths of an inch to five-tenths, yet none of these have an ocellus in the forehead, and the larger individuals having an ocellus scarcely differ among themselves in size.

The large worker of this species may be known from that of *Æ. sexdentata*, by having an ocellus, a more polished head, and by having the mandibles of the same colour as the head, with the teeth black; *Æ. sexdentata* has the anterior margin of the face and the mandibles blackish-brown or black; the colour of the mandibles alone will serve to separate the small workers.

2. *ÆCODOMA LÆVIGATA*. Pl. X. fig. 24.

B.M.

Worker major. Length $5\frac{1}{2}$ lines.—Chestnut-red, nearly destitute of pubescence: the thorax, the two nodes, and the apical

segments of the abdomen with a few scattered erect hairs; the legs slightly pubescent, the hairs very fine and short; the head and first segment of the abdomen glassy smooth and shining. The head very large, more deeply impressed than in *cephalotes*, more swollen and rounded laterally, and armed behind with two acute spines. The thorax with two long spines anteriorly, two posteriorly, and with two minute ones placed a little before the middle towards the anterior pair; there are also two acute bent spines at the sides just above the anterior coxæ.

Worker minor.—Of an opaque reddish-brown: head large, twice the width of the thorax, deeply notched above; the vertex transversely quadrate, the anterior angles acute, the posterior ones with a short curved acute spine; the antennæ slender, and quite as long as the body. The prothorax with two stout acute spines, curved forwards, behind each of which is a minute acute straight spine; a short acute spine on the sides above the anterior coxæ; the metathorax with two long, acute, nearly upright spines which are slightly curved inwards. The nodes of the abdomen subquadrate, the second about twice the width of the first, both with a sharp carina on their lateral margins, those on the second node terminating in a small tubercle; the abdomen globose.

Worker minima.—Very like the *worker minor*, but is little more than half the size.

These workers are placed together on the authority of Mr. H. W. Bates, who captured them at Santarem; whether they can possibly be mere varieties of the common *cephalotes*, it is impossible to determine without actual observation; the differently formed head, perfectly smooth and naked, as well as the smooth abdomen, appear to characterize a very distinct species.

3. *ÆCODOMA SEXDENTATA*. Pl. X. fig. 19.

B.M.

Formica sexdens, Linn. *Syst. Nat.* i. 964. 14 ♂.

Fabr. Syst. Ent. 395. 23; *Ent. Syst.* ii. 363. 23.

De Geer, Ins. iii. 608. pl. 31. t. 14.

Oliv. Encycl. Méth. vi. 500.

Formica sexdentata, Latr. *Hist. Nat. Fourm.* 228.

Atta sexdens, *Fabr. Syst. Piez.* 422. 2.

Hab. Cayenne; Surinam; Para; Rio; South America; St. Vincent's.

This is probably the large form of the worker of *Æcodoma abdominalis*, that which follows being the smaller form of the same species.

The Rev. Hamlet Clark says of this species: "Twenty years ago it was not known at Rio, except by name, as a pest in the

Minas district; during this time it has been gradually advancing across the country, or rather under the country, establishing everywhere colonies; and now, within the last two or three years, it has reached the Organ Mountains, where I found it in two localities. Mr. Heath, the proprietor of Constancia, has used all means to exterminate it, but without the least success; sometimes in a single night it will strip a whole orange or lemon tree of its leaves; a ditch of water round his garden which quite keeps out all other ants, is of no use: this species carries a mine below its bed without any difficulty,—indeed I have been assured again and again by sensible men, that it has undermined, in its progress through the country, the *great river Paraíba*, as broad as the Thames at London Bridge; at any rate, without anything like a natural or artificial bridge, it appears on the other side, and continues its course. Its food is principally vegetable—leaves of trees and plants. I have seldom, if ever, seen it carrying flies, as other ants do, to its burrow—always slices of leaf."

4. *ÆCODOMA ABDOMINALIS*. Pl. X. fig. 22.

B.M.

Female. Length 10 lines.—This species is the same size as *cephalotes*; in all the examples examined the wings are paler, the abdomen less pubescent, its first segment longer, and the sides less rounded; in other respects they agree very closely: the present species is, however, usually of a brighter colour, particularly the abdomen, which is redder. Specimens have been received from various parts of South America. In the British Museum are several forms of workers, but which of them belong to this apparently distinct species, it is impossible to ascertain without direct observation of the colonies of the species.

5. *ÆCODOMA COPTOPHYLLA*.

B.M.

Atta coptophylla, Guér. *Icon. Règ. Anim.* iii. 422. 2 ♂.

Formica cephalotes, Pohl & Kollar, *Bras. vorz. läst. Ins.* p. 15. f. 10?

Hab. Brazil.

6. *ÆCODOMA COLOMBICA*.

Atta Colombica, Guér. *Icon. Règ. Anim.* 422. 4 ♂.

Hab. Columbia.

7. *ÆCODOMA LEBASII*.

Atta Lebasii, Guér. *Icon. Règ. Anim.* iii. 422. 5 ♂.

Hab. Columbia.

3. *ÆCODOMA INSULARIS*.

Atta insularis, Guér. *Icon. Règ. Anim.* iii. 422. 3 ♂.

Hab. Cuba.

9. *ÆCODOMA MEXICANA*. Pl. X. fig. 20.

B.M.

Atta fervens, Say, *Bost. Journ. Nat. Hist.* i. 290.

Female. Length 8-9 lines.—Obscurely ferruginous, nearly black; closely resembling *Æ. cephalotes*, but the thorax is more elongate; the second node of the abdomen wider, with the lateral angles produced and acute; the base of the abdomen truncated, the first segment longer than broad; in other respects resembling *Æ. cephalotes*, but more hairy or downy.

Male.—In size and form resembling the male of *Æ. cephalotes*?, but of a uniform pale reddish yellow; the second abdominal node much wider.

Hab. Mexico.

The insect described as *lævigata* is probably the worker of this species; in the Museum are several specimens from Mexico.

DIVISION 2.

The first submarginal of equal width throughout, transverse at both extremities, the recurrent nervure uniting with the transverse nervure at the base of the marginal cell; body tuberculate.

10. *ÆCODOMA ASPERSA*. Pl. X. fig. 17.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Brown-black: the head and abdomen roughened, covered with short sharp spines; the mandibles, scape, sides of the face, its anterior margin, the carinæ between the antennæ and the spines on the vertex, ferruginous. Thorax ovate, with two bright ferruginous longitudinal lines on the mesothorax; the scutellum and post-scutellum ferruginous; a straight, stout, acute spine on each side of the thorax in front, and two longer bent acute ones on the metathorax, ferruginous; wings yellowish hyaline, the nervures pale ferruginous; the legs of moderate length, roughened with short spines and stiff hairs. Abdomen: the first node armed with a stout blunt spine on each side; the second node with numerous short spines on each side, the sides red; the first segment flattened towards the base, which has a ferruginous spot on each side; the apical margins of the segments more or less ferruginous.

Hab. Brazil.

The close resemblance between this species and *Æ. hystrix* leaves little doubt of the latter being the worker of the present

species; the neururation of the wings of *aspersa* is somewhat different to the typical form of *Æ. cephalotes*, and it might be desirable to form a subgenus for its reception; for the present we retain them as a section only.

11. *ÆCODOMA CORONATA*.

B.M.

Formica coronata, *Fabr. Syst. Piez.* p. 413. 70 ♀.

Hab. Brazil; Rio (Petropolis). (Coll. Rev. Hamlet Clark.)

12. *ÆCODOMA NIGRA*.

B.M.

Female. Length 6 lines.—Black: the mandibles ferruginous longitudinally striated, and having two blunt teeth at their apex, their base, outer margins and apex black; two longitudinal carinæ on the front, which run irregularly and obliquely to the lateral posterior angles of the head, each carina is elevated into a spine or tooth opposite the eyes; the head is longitudinally strigose, and has a number of short spines at the posterior angles. Thorax: a short curved spine on each side in front, and two rather longer curved ones on the metathorax; the mesothorax and scutellum longitudinally covered with a series of irregular carinæ; the legs covered with short brown pubescence, the tarsi obscurely ferruginous. Abdomen globose, covered with irregular points and tubercles; the first node of the peduncle quadrate, and having a number of short points or tubercles; the second node transverse, and similarly tuberculate.

Hab. Brazil; Rio (Tejuca). (Coll. Rev. Hamlet Clark.)

13. *ÆCODOMA HYSTRIX*. Pl. X. fig. 18.

B.M.

Formica hystrix, *Latr. Hist. Nat. Fourm.* 229 ♂.

Fabr. Syst. Piez. 414. 75 ♀.

Atta hystrix, *Halid. Trans. Linn. Soc.* xvii. p. 328 (1837).

Hab. South America; Brazil (Para). (Coll. H. W. Bates.)

Of this species Mr. Bates remarks—"This is a distinct species offering precise characters in the thoracic spines, &c. I found a vast number on one occasion in a low meadow, carrying away fragments of fallen fruit; the whole were nearly of uniform size. I found none of the large-headed individuals."

14. *ÆCODOMA RUGOSA*.

B.M.

Female. Length $3\frac{1}{2}$ lines.—Pale red: the head roughened with several short spines on the lateral margins of the vertex, two irregular ridges running backwards from the insertion of the antennæ, with irregular elevations or points between; the occipital

distinct; the teeth of the mandibles and the eyes black. Thorax ovate, not narrowed behind as in the workers; the prothorax with an acute tooth on each side, and also one just above the insertion of each anterior coxa; the mesothorax with a few short cattered hairs on the disk; the metathorax with an acute tooth on each side near the insertion of the petiole of the abdomen; legs of moderate length, not elongated as in the workers. Abdomen: the upper surface irregular, with numerous pointed elevations and scattered, short, stiff hairs.

Lab. Brazil.

5. *CECODOMA PALLIDA*.

B.M.

Worker major, length 2 lines. Worker minor, $1\frac{1}{2}$ line.— This species very closely resembles *hystrix*; its largest worker, however, is smaller than the smallest of that species, and its small worker the most diminutive of the genus. Mr. Bates says, "Very similar to the former (*hystrix*) in the number of the thoracic spines, &c., but I think a distinct species. I found a procession of them in a sandy tract of ground; all the individuals were of a uniform pale colour."

Lab. Brazil (Santarem).

This is probably the worker of *Æ. rugosa*.

Subfam. 4. CRYPTOCERIDÆ.

Genus 1. CRYPTOCERUS.

Formica, pt., *Linn. Syst. Nat.* i. 965.

Cryptocerus, *Latr. Hist. Nat. Crust. et Ins.* xiii. 260.

Head more or less flattened above, quadrate or subquadrate, the sides expanded into flattened marginal plates, concealing or partly concealing the eyes. Antennæ incrassate; in repose, received into a deep channel extending from their base above the eyes towards the vertex; the scape of the antennæ grooved beneath for the reception of the basal joints of the flagellum. Labrum transverse, its anterior margin deeply emarginate. Labial palpi 3-jointed; maxillary palpi 5-jointed. Superior wings with one marginal and two submarginal cells. Abdomen oblongate in the females, ovate in the males; the peduncle with two nodes.

CRYPTOCERUS ATRATUS.

B.M.

Formica atrata, *Linn. Syst. Nat.* i. 965. 16♂.

Fabr. Syst. Ent. 395. 24; *Ent. Syst.* ii. 363. 54.

Formica atrata, Christ, *Naturl. Ins.* 516.

Oliv. Encycl. Méth. vi. 500. 49.

Latr. Hist. Nat. Fourm. 272. t. 12. f. 74 a ♂, 74 b ♀.

Formica quadridens, De Geer, *Ins.* iii. 609. 7. t. 31. f. 17-20.

Cryptocerus atratus, *Latr. Hist. Nat.* xiii. 260. t. 102. f. 1.

Fabr. Syst. Piez. 418. 1.

Klug, Ent. Mon. 260. 1.

St. Farg. Hym. i. 170. 1.

Guér. Icon. Règ. Anim. 424. t. 69. f. 3.

Spin. Mem. Accad. Torino, 2nd ser. xiii. 63. 47 (1853).

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 215 ♂ ♀ ♂.

Cryptocerus marginatus, *Fabr. Syst. Piez.* 419. 2 ♀.

Cryptocerus dubitatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 216 ♂.

Hab. Brazil; Surinam; Cayenne.

2. CRYPTO CERUS OCULATUS.

Cryptocerus oculatus, *Spin. Mem. Accad. Torino*, 2nd ser. xiii. 65. 48 ♂.

Cryptocerus æthiops, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 216. 3. pl. 20. f. 9 ♂ (1853).

Hab. Brazil (Para).

3. CRYPTO CERUS SERRATICEPS.

B.M

Female. Length 6 lines.—Jet-black: head depressed, slightly convex at the vertex; ocelli distinct; strongly punctured and slightly shining; the lateral margins elevated and finely serrated; deeply emarginate anteriorly; antennæ short, thick at clavate, the extreme apex ferruginous. Thorax shorter than the abdomen, the disk shining, with large scattered punctures; the lateral angles of the prothorax with a short, stout, acute spine; the metathorax with two short, straight, thick spines; wings hyaline, the nervures thick, and of a blackish-brown; a fuscous cloud occupying the marginal cell, and passing beyond to the apex of the wings; a narrow fuscous stain traverses all the nervures of the wings, the stigma black; the femora and tibiæ with their sides flattened, four-sided, with a few scattered pale setæ. Abdomen oblong-ovate, very smooth and shining, with scattered delicate punctures; the apical segments roughened, with the margins smooth and shining; the nodes of the petiole subglobose.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

. CRYPTO CERUS CLYPEATUS.

B.M.

Cryptocerus clypeatus, *Fabr. Syst. Piez.* 420. 3 ♂.*Perty, Del. An. Art.* 136. t. 27. f. 4.*Klug, Ent. Mon.* 207. 6.*Guér. Icon. Règ. Anim.* 426. 6.*Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii.

217. 5. pl. 21. f. 1 ♀, 2 ♂, 5, 6 ♀.

Hab. Brazil (Santarem).

. CRYPTO CERUS D'ORBIGNYANUS.

Cryptocerus D'Orbignyianus, *Smith, Mon. Crypt. Trans. Ent. Soc.**Lond.* 2nd ser. ii. 218. 11. pl. 19. f. 5 ♀.*Hab.* South America.

. CRYPTO CERUS QUADRIMACULATUS.

B.M.

Cryptocerus quadrimaculatus, *Klug, Ent. Mon.* 215. 10 ♀.*Guér. Icon. Règ. Anim.* 426.*Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 219.

12. pl. 19. f. 8 ♀.

Hab. Brazil (Villa Nova, Amazons). (Coll. H. W. Bates.)

. CRYPTO CERUS QUADRIGUTTATUS.

Cryptocerus quadriguttatus, *Guér. Icon. Règ. Anim.* 425 ♂.*Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 217. 7.*Hab.* Columbia; Bolivia.

. CRYPTO CERUS ARGENTATUS.

B.M.

Cryptocerus argentatus, *Smith, Mon. Crypt. Trans. Ent. Soc.**Lond.* 2nd ser. ii. 218. 10. pl. 19. f. 7 ♀.*Hab.* Columbia; Mexico.

. CRYPTO CERUS ANGULATUS.

B.M.

Worker. Length 4 lines.—Black: shining and finely punctured; head convex above, margined at the sides, truncate behind; the clypeus emarginate, above which is an opaque triangular depression, and an abbreviated impressed line above it; the tips of the antennæ rufo-piceous. Thorax: the prothorax as broad as the head; the anterior margin arched, margined at the sides, and abruptly narrowed and depressed behind; the mesothorax with its lateral angles produced into flattened teeth or spines rounded at their apex; the metathorax transverse, narrowed at the base and notched at the sides, forming two blunt

teeth or spines; the legs with the sides flattened, thinly sprinkled with glittering scales. Abdomen ovate, emarginate at the base, also margined laterally; the nodes of the peduncle transverse, produced at the sides into stout bent spines, those on the first node longest; the punctures on the head, thorax and abdomen each contain a bright glittering scale.

Hab. Brazil (Tunantins). (Coll. H. W. Bates.)

10. *CRYPTOCERUS ELONGATUS.*

B.M.

Cryptocerus elongatus, *Klug, Ent. Mon.* 214. 9 ♂.

Guér. Icon. Règ. Anim. 426.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 218. 8.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

11. *CRYPTOCERUS RIMOSUS.*

Cryptocerus rimosus, *Spin. Mem. Accad. Torino*, xiii. 65. 49 ♂.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 223. 2.

Hab. Brazil (Para).

12. *CRYPTOCERUS FEMORALIS.*

B.M.

Cryptocerus femoralis, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 219. 15. pl. 20. f. 3 ♂.

Hab. Columbia; Brazil (Tunantins). (Coll. H. W. Bates.)

13. *CRYPTOCERUS CORDATUS.*

Cryptocerus cordatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 220. 16. pl. 21. f. 3 ♂.

Hab. Brazil (Santarem).

14. *CRYPTOCERUS MINUTUS.*

B.M.

Cryptocerus minutus, *Fabr. Syst. Piez.* 425. 5 ♂.

Klug, Ent. Mon. 203. 3.

Guér. Icon. Règ. Anim. 426. 2.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 221. 1.

Hab. South America (Villa Nova). (Coll. H. W. Bates.)

15. *CRYPTOCERUS PUSILLUS.*

B.M.

Cryptocerus pusillus, *Klug, Ent. Mon.* 202. 2 ♂.

Guér. Icon. Règ. Anim. 426.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 220. 17. pl. 20. f. 8.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

CRYPTOCERUS OBTUSUS.

B.M.

worker. Length $2\frac{1}{2}$ lines.—Opaque black : head large, wider than the thorax or abdomen; the sides margined before the eyes and obscurely ferruginous, widely emarginate in front; the anterior lateral angles of the head rounded, emarginate behind; the antennæ rufo-piceous at their apex. Thorax: the thorax transverse, with two blunt teeth on each side; the thorax narrowed to the base of the metathorax, the latter with a short tooth at its basal angles, the apical angles being produced into long stout obtuse spines. Abdomen ovate, narrowly margined, and deeply emarginate at the base, the margins of the base ferruginous; the nodes of the peduncle transverse, the second node with a short stout spine at the sides; the entire thorax sprinkled with minute glittering scales.

Brazil (Santarem). (Coll. H. W. Bates.)

CRYPTOCERUS PINELII.

Cryptocerus Pinelii, Guér. *Icon. Règ. Anim.* 425.

Smith, *Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 221. 19.

. Brazil (Moro-Gueimado).

CRYPTOCERUS COMPLANATUS.

Cryptocerus complanatus, Guér. *Icon. Règ. Anim.* 424 ♂.

Smith, *Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 221. 20.

. Cayenne.

CRYPTOCERUS PAVONII.

Cryptocerus Pavonii, Latr. *Gen. Crust. et Ins.* iv. 132 ♂.

Smith, *Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 221. 21.

. South America.

CRYPTOCERUS DISCOCEPHALUS.

B.M.

Cryptocerus discocephalus, Smith, *Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 222. 23. pl. 20. f. 2 ♂.

. Brazil (Villa Nova). (Coll. H. W. Bates.)

CRYPTOCERUS CAUSTICUS.

Cryptocerus caustica, Pohl & Kollar, *Bras. Ins.* 17. t. . f. 12 ♂.

Cryptocerus causticus, Guér. *Icon. Règ. Anim.* 426.

Smith, *Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 222. 24.

. Brazil.

22. CRYPTOCERUS ELEGANS.

B.M.

Cryptocerus elegans, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.*
2nd ser. ii. 222. 25. pl. 19. f. 3 ♂.

Hab. Brazil (Villa Nova).

23. CRYPTOCERUS DEPRESSUS.

Cryptocerus depressus, *Klug, Ent. Mon.* 204. 4 ♂.

Guér. Icon. Règ. Anim. 426.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 219.3.

Hab. Rio Janeiro.

24. CRYPTOCERUS MEMBRANACEUS.

B.M.

Cryptocerus membranaceus, *Klug, Ent. Mon.* 208. 3 ♂.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 217. 6.
pl. 21. f. 4.

Hab. Brazil; Rio (Tejuca). (Coll. Rev. Hamlet Clark.)

25. CRYPTOCERUS PALLENS.

Cryptocerus pallens, *Klug, Ent. Mon.* 206. 5.

Guér. Icon. Règ. Anim. 426.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 218.9.

Hab. Brazil.

26. CRYPTOCERUS UMBRACULATUS.

Cryptocerus umbraculatus, *Fabr. Syst. Piez.* 420. 4 ♂.

Klug, Ent. Mon. 210. 8.

Guér. Icon. Règ. Anim. 426. 8.

Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 219.14.

Hab. South America.

27. CRYPTOCERUS UNIMACULATUS.

Cryptocerus unimaculatus, *Smith, Mon. Crypt. Trans. Ent. Soc.*
Lond. 2nd ser. ii. 221. 22. pl. 19. f. 9 ♂.

Hab. Brazil.

28. CRYPTOCERUS HÆMORRHOIDALIS.

Formica hæmorrhoidalis, *Latr. Hist. Nat. Fourm.* 276.

Cryptocerus hæmorrhoidalis, *St. Farg. Hym.* i. 172. 3.

Hab. St. Domingo.

CRYPTOCERUS ARANEOLUS.

ryptocerus araneolus, *Smith, Trans. Ent. Soc. new ser. ii. 223. 27.*

ab. St. Vincent's.

CRYPTOCERUS PUBESCENS.

ryptocerus? pubescens, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 223. 29. pl. 20. f. 4 ♂.*

ab. Adelaide.

Genus 2. MERANOPLUS.

ryptocerus, *pt.*, *Guér. Icon. Règ. Anim. 425.*

eranoplus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 224 (1853).*

MERANOPLUS PETIOLATUS.

eranoplus petiolatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 224. 2. pl. 20. f. 7 ♂.*

ab. Brazil.

MERANOPLUS BICOLOR.

ryptocerus bicolor, *Guér. Icon. Règ. Anim. 425.*

eranoplus bicolor, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 224. 1.*

b. India (Pondicherry).

MERANOPLUS CORDATUS.

Worker. Length 2 lines.—Chestnut-red: the thorax with anterior lateral angles acute, and armed posteriorly with four spines. The head and thorax paler than the abdomen, the head very delicately reticulated; the eyes small, black, and placed backwards on the sides of the head towards the vertex; the clypeus widely truncate in front. Thorax slightly rounded in the middle in front; the sides narrowed and rounded to the apex of the metathorax; the posterior margin transverse, at each of its lateral angles a curved acute spine, with a shorter spine a little beyond them; the truncation of the metathorax with a short acute spine about the middle on each side. Abdomen: first node, viewed laterally, is wedge-shaped, the second subquadrate, its posterior margin produced into an acute spine; the anterior margin of the first node truncate; the abdomen heart-shaped; the entire insect sprinkled with erect pale hairs.

ab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

This is probably the worker of *M. castaneus*.

4. *MERANOPLUS MUCRONATUS*.

B.M.

Worker. Length 2-2½ lines.—Head, thorax and legs ferruginous, the abdomen black; the thorax quadrate, each angle produced into a long acute spine; the head, thorax, and nodes of the peduncle coarsely rugose; the head narrowed before the eyes, and widely emarginate in front; the eyes prominent, behind them the margins of the head are widened, and again narrowed to the lateral angles, which are rounded; the head and thorax with a few scattered long reddish hairs. The hinder margin of the thorax with two short blunt spines in the middle, outside of each is a very minute tooth or spine; the metathorax smooth, shining, and concavely truncate; in the middle of the lateral margins of the truncation is a long slender acute spine; the legs and abdomen sprinkled with very long ferruginous hairs.

Hab. Malacca (Mount Ophir).

On a ticket attached to specimens of this species, Mr. Wallace writes, "House-Ant," but we have no further information.

5. *MERANOPLUS CASTANEUS*.

Female. Length 3½ lines.—Chestnut-red: head and thorax longitudinally subrugose; the metathorax with two small teeth or spines; the second node of the peduncle with a minute spine posteriorly; the flagellum obscurely ferruginous; the teeth and eyes black; the metathorax truncate, the centre of the truncation finely striated longitudinally; the legs with scattered pale hairs; the base of the femora obscurely ferruginous. Abdomen ovate, finely punctured, and sprinkled with long pale hairs; the nodes of the peduncle rugose; the first, viewed laterally, wedge-shaped, and produced into an angular tooth or process at its base; the second subquadrate; both are sprinkled with long erect hairs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

6. *MERANOPLUS GRACILIS*.

B.V.

Worker. Length 2½ lines.—Black: head convex, subopaque and finely punctured; eyes large, prominent, placed forwards on the sides of the head, the posterior angles rounded; the clypeus concave, or depressed in the middle, its anterior margin wide, but slightly emarginate. Thorax longitudinally rugose, intermixed with deep punctures, elongate and narrowed to the base of the mesothorax; the anterior margin of the prothorax arched, with the lateral angles subacute; the posterior lateral angles c

the mesothorax tuberculate; the metathorax with the basal lateral angles rounded, and the apical ones produced into long stout acute spines. Abdomen ovate; the first node of the peduncle rugose, much narrower than the second, which is truncate at the base, rounded at the sides and behind.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

7. *MERANOPLUS DIFFORMIS*.

B.M.

Worker. Length 1 line.—Head and abdomen reddish-brown; antennæ, mandibles, thorax and legs pale ferruginous; the head oblong, with a number of shallow depressions above; the lateral margins deeply contracted about the middle, opposite the eyes, the sides expanded and rounded before the contraction and narrowly margined behind it; the vertex emarginate behind. Thorax with depressions on the disk, rounded in front and obliquely truncate behind; a deep contraction between the meso- and metathorax, three obtuse teeth or spines on the margins on each side; the metathorax with a longitudinal depression in the centre; the legs elongate, without spines or hairs. Abdomen subglobose, widest towards the apex; the first node of the peduncle small and transverse, the second large, subglobose, and with a depression above; there is also a central depression at the base of the abdomen.

Hab. Santarem.

8. *MERANOPLUS SINGULARIS*. Pl. XIII. f. 6–10.

Worker. Length $2\frac{1}{2}$ lines.—Reddish-brown, rugose and hispid. The female is a little larger, of the same colour, and similarly rugose and hispid.

Genus 3. *CATAULACUS*.

Formica, pt., *Latr. Hist. Nat. Fourm.* 275 (1802).

Cryptocerus, pt., *St. Farg. Hym.* i. 171 (1836).

Cataulacus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. (1853).

1. *CATAULACUS TAPROBANÆ*.

Cataulacus Taprobanæ, *Smith, Mon. Crypt. Trans. Ent. Soc.* 2nd ser. ii. 225. 1. pl. 20. f. 10 ♂.

Hab. Ceylon.

2. CATAULACUS GUINEENSIS.

Cataulacus Guineensis, *Smith, Mon. Crypt. Trans. Ent. Soc.* new ser. ii. 225. 2. pl. 20. f. 5 ♀.

Hab. Tropical Western Africa.

3. CATAULACUS PARALLELUS.

Cataulacus parallelus, *Smith, Mon. Crypt. Trans. Ent. Soc.* 2nd ser. ii. pl. 19. f. 6.

Hab. Cape of Good Hope.

4. CATAULACUS GRANULATUS.

Formica granulata, *Latr. Hist. Nat. Fourm.* 275. pl. 12. f. 75.
Cryptocerus granulatus, *St. Farg. Hym.* i. 171. 2.

Cataulacus granulatus, *Smith, Mon. Crypt. Trans. Ent. Soc.* new ser. ii. 226. 4.

Hab. India.

5. CATAULACUS HORRIDUS.

B.M.

Worker. Length 3 lines.—Black: the posterior angles of the head spinose, the margins of the head crenulated; the thorax armed posteriorly with two elongate, stout, acute spines; the antennæ short, thick and clavate, their apex rufo-testaceous; the head reticulated, produced before the eyes and widely truncated anteriorly, the lateral angles of the truncation rounded, the lateral margins of the head with a short spine before the eyes; the posterior margin of the vertex emarginate its entire width, the lateral angles produced into long acute spines. Thorax ruggedly sculptured on the disk, narrowed to the apex of the mesothorax which is separated from the hinder portion by a deep transverse incision, the posterior angles produced into long acute spines. The nodes of the peduncle rugose; the abdomen rounded, emarginate, and striated at the base; the entire insect sprinkled with short, erect, white setæ.

Hab. Borneo (Sarawak).

6. CATAULACUS RETICULATUS.

Worker. Length $1\frac{1}{2}$ –2 lines.—Black: finely reticulated, the abdomen very delicately so; the margins of the head and thorax crenulated, the latter armed with two long, stout, straight, parallel spines; the antennæ short, thick and clavate; the clypeus widely emarginate, the lateral margins of the head with a minute angular spine or tooth before the eyes. Thorax: the anterior margin slightly rounded; the sides rounded, the margins with a short

tooth anteriorly and posteriorly; the anterior tibiæ and tarsi, and the apical joints of the intermediate and posterior tarsi ferruginous. Abdomen ovate, margined at the sides and emarginate at the base.

Var. minor. The scape, apical joint of the flagellum, the head, before the eyes, and the legs, ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

7. CATAULACUS INSULARIS.

Male. Length 3 lines.—Black: the lateral angles of the vertex produced into stout acute spines; the metathorax bispinose. The head and thorax rugose; the antennæ, eyes, mandibles, tibiæ and tarsi, ferruginous; the eyes large and prominent; the clypeus produced, truncate anteriorly; the sides of the head behind the eyes serrated; beneath the lateral spines of the vertex are two smaller spines; the wings pale flavo-hyaline, the nervures scarcely discernible; the metathorax emarginate its entire width, with an acute spine at the lateral angles. The nodes of the abdomen rugose; the first node oblong-quadrate, the second nearly quadrate; the abdomen reddish at the base, and, as well as the nodes, thinly sprinkled with erect whitish hairs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

Genus 4. ECHINOPLA.

Echinopla, Smith, *Proc. Linn. Soc.* ii. 79 (1857).

Head transverse; eyes small, placed laterally, high on the head, on the top of short pedestals; antennæ 12-jointed, inserted forwards on the head, wide apart; labial palpi 4-jointed, the three basal ones of about equal length, clavate, the apical joint as long as the two preceding joints united. Maxillary palpi 5-jointed, elongate, the three apical joints long and slender, the two basal ones much shorter and stouter. Mandibles equal in length and of equal width throughout, armed with four teeth at the apex. Thorax oblong-quadrate; legs of moderate length, 5-jointed, each tibia armed with a single spine at the apex. Abdomen globose; peduncle formed of a single segment, the basal segment very large, concealing the other segments.

1. ECHINOPLA MELANARCTOS.

1858.

Echinopla melanarctos, Smith, *Proc. Linn. Soc.* ii. 79 (1857).

Worker. Length $2\frac{1}{2}$ –3 lines.—Black, very glossy. Head pale testaceous; on each side of the face from the eyes to the

raised plate, beneath which the antennæ are inserted; the sides of the head longitudinally and coarsely rugose; the head above, the thorax and abdomen, covered with short blunt spines, each of the spines having a long stiff hair at its apex; the node of the abdomen transverse, terminating on each side in a long sharp spine; the abdomen globose, beneath, smooth and shining.

Hab. Singapore.

2. ECHINOPLA PALLIPES.

B.M.

Echinopla pallipes, *Smith, Proc. Linn. Soc. ii. 80. 2 ♂.*

Worker. Length $2\frac{1}{2}$ lines.—Black: body hispid; eyes prominent. Abdomen globose, node of the peduncle transverse, produced on each side into an acute spine; legs pale testaceous. Head and thorax rugose; the abdomen vermiculate, and covered with slight elevations placed in great regularity over the entire upper surface, each elevation terminating in a hair. The scape and the mandibles ferruginous, the eyes very prominent, the palpi and legs pale testaceous, with the tarsi rufo-piceous. Abdomen obscurely rufo-piceous.

Hab. Borneo (Sarawak).

The sculpture of this insect is difficult to describe: the head and thorax are the most coarsely rugose, the rugosity being regularly interspersed with short blunt spines, each having a single hair springing from its summit.

3. ECHINOPLA STRIATA.

B.M.

Echinopla striata, *Smith, Proc. Linn. Soc. ii. 80. 3 ♂.*

Worker. Length 3 lines.—Black: head, thorax and abdomen longitudinally striated; thorax oblong-quadrate, the scale of the peduncle transverse. The head with an obscure blue tinge; the palpi pale testaceous. Thorax: the margins denticulate; the anterior margin rounded, the lateral ones narrowed to the middle and again widened posteriorly; above very slightly convex; the division between the pro- and mesothorax distinctly marked by a suture; between the meso- and metathorax is a deep stragulation; the peduncle of the abdomen transverse, incrassate and armed on each side with a straight stout spine. Abdomen orbiculate; the entire insect thinly sprinkled with erect black hairs.

Hab. Malacca.

EXPLANATION OF THE PLATES.

PLATE I.

Fig.

1. Nest of *Crematogaster Montezumia*, half the natural size.
2. Nest of *Polyrhachis textor*, natural size.

PLATE II.

1. Nest of *Formica gibbosa*, natural size.
2. Profile of the Ant, magnified.

All the figures in Plates III. to XII. are magnified, unless the contrary is stated.

PLATE III.

1. Anterior wing of *Formica rufa*, female.
2. " " " *herculanea*, female.
3. " " " *smaragdina*, female.
4. " " " *viatica*, female.
5. " " *Polyrhachis militaris*, female.
6. " " *Tapinoma erraticum*, female.
7. Mandible of *Formica rufa*, worker.
8. Scale of the petiole of *Formica rufa*, worker major.
9. " " " " worker minor.
10. " " " *sanguinea*, worker.
11. " " " *umbrata*, worker.
12. " " " *cunicularia*, worker.
13. " " " *cunicularia*, male.
14. " " " *fusca*, male.
15. " " " *herculanea*, worker.
16. " " " " female.
17. " " " *ligniperda*, female.
18. " " " *exsecta*, worker.
19. Head of *Formica exsecta*, worker.
20. Maxillary palpi of *Formica exsecta*, worker.

Fig.

21. Labial palpi of *Formica exsecta*, worker.
22. Antennæ of *Formica fusca*, male.
23. " " *cunicularia*, male.
24. Abdomen of *Formica virescens*, male.
25. Antennæ of *Formica virescens*, male.
26. Scale of the petiole of *Formica virescens*, female.
27. Lateral view of the scale of *Formica virescens*, female.
28. Head of an Ant, showing the position of the frontal area at *a*.
29. Head of an Ant, with the frontal area obsolete at *a*.
30. *Formica gigas*, worker major, natural size.

PLATE IV.

1. Anterior wing of *Polyergus rufescens*, female.
2. Head of *Polyergus rufescens*, male.
3. Scale of the petiole of *Polyergus rufescens*, male.
4. Head of *Polyergus rufescens*, female.
5. Antennæ of *Polyergus rufescens*, female.
6. Labial palpi of *Polyergus rufescens*, female.
7. Maxillary palpi of *Polyergus rufescens*, female.
8. Scale of the petiole of *Polyergus rufescens*, female.
9. Mandible of *Polyergus rufescens*, worker.
10. Labial palpi of *Polyrhachis*.
11. Maxillary palpi of *Polyrhachis*.
12. Thorax of *Polyrhachis mutatus*, worker.
13. Scale of the petiole of *Polyrhachis mutatus*, worker.
14. " " " *Gagates*, worker.
15. " " " *hastatus*, worker.
16. Thorax of *Polyrhachis hastatus*, worker.
17. Scale of the petiole of *Polyrhachis aciculatus*, worker.
18. Thorax of *Polyrhachis aciculatus*, worker.
19. " " *bihamatus*, worker.
20. Thorax and abdomen of *Polyrhachis furcatus*, worker.
21. Scale of the petiole of *Polyrhachis laboriosus*, worker.
22. " " " " worker: lateral view.
23. " " " " *constructor*, worker.
24. " " " " *piliventris*, worker.
25. " " " " *inermis*, worker.
26. Thorax of *Polyrhachis inermis*, worker.
27. Scale of the petiole of *Polyrhachis defensus*, worker.
28. Lateral view of the scale of *Polyrhachis rufipes*, worker.
29. Scale of the petiole of *Polyrhachis tyrannicus*, worker.
30. Lateral view of the thorax and abdomen of *Polyrhachis consimilis*, worker.

Fig.

31. Scale of the petiole of *Polyrhachis consimilis*, worker.
32. " " " *dives*, worker.
33. Lateral view of the scale of *Polyrhachis dives*, worker.
34. Scale of the petiole of *Polyrhachis Philippinensis*, worker
35. " " " *militaris*, female.
36. " " " " male.
37. " " " *villipes*, worker.
38. Thorax of *Polyrhachis villipes*, worker.
39. Scale of the petiole of *Polyrhachis vigilans*, worker.
40. " " " *lacteipennis*, female.
41. " " " *viscosus*, worker.
42. " " " *levissimus*, worker.
43. " " " *Sumatrensis*, worker.
44. Thorax and scale of the petiole of *Polyrhachis malignus*, female.
45. Thorax and scale of the petiole of *Polyrhachis Pandarus*, worker.
46. Scale of the petiole of *Polyrhachis femoratus*, worker.
47. " " " *cyaniventris*, worker.
48. Thorax of *Polyrhachis carinatus*, worker.
49. Scale of the petiole of *Polyrhachis carinatus*, worker.

PLATE V.

1. *Dolichoderus attelaboides*, ♀.
2. Head of the male of *Dolichoderus attelaboides*.
3. Abdomen of the male of *Dolichoderus attelaboides*.
4. Head of *Odontomachus hæmatodes*, worker.
5. Mandible of *Odontomachus hæmatodes*, worker.
6. Scale of the petiole of *Odontomachus hæmatodes*, worker.
7. Wing of *Odontomachus hæmatodes*, female.
8. Scale of the peduncle of *Odontomachus simillimus*, female.
9. Wing of *Odontomachus simillimus*, female.
10. Profile of *Odontomachus sævissimus*, worker.
11. Profile of the thorax of *Odontomachus sævissimus*, female.
12. Head of *Odontomachus maxillaris*, worker.
13. Scale of the peduncle of *Odontomachus maxillaris*, worker.
14. Mandible of *Odontomachus maxillaris*, worker.
15. Profile of *Odontomachus quadrispinosus*, worker.
16. Abdomen and scale of the peduncle of *Odontomachus quadrispinosus*, worker.
17. Thorax of *Odontomachus quadrispinosus*, worker.
18. *Drepanognathus saltator*, worker.
19. Mandible of *Drepanognathus saltator*, worker.

The measures of the insects in this Plate are taken from the tip of the mandibles to that of the abdomen.

PLATE VI.

Fig.

1. *Eciton crassicornis*, worker major.
2. Antennæ of *Eciton crassicornis*, worker major.
3. Labium and labial palpi of *Eciton crassicornis*, worker major.
4. Maxilla and maxillary palpus of *Eciton crassicornis*, worker major.
5. Mandible of *Eciton hamata*.
6. Head of *Eciton rapax*, worker.
7. Antennæ of *Eciton rapax*, worker.
8. " " *curvidentata*, worker.
9. Maxillary palpus of *Ponera contracta*, worker.
10. Labium and labial palpi of *Ponera contracta*, worker.
11. Wing of the female of *Ponera contracta*, worker.
12. Antennæ of *Ponera contracta*, worker.
13. Head of *Ponera denticulata*, worker.
14. Mandible of *Ponera denticulata*, worker.
15. Labium and labial palpi of *Ponera tarsata*.
16. Maxilla and maxillary palpus of *Ponera tarsata*.
17. " " *metallica*.
18. Labium and labial palpi of *Ponera metallica*.
19. Labium and labial palpi of *Ponera Æthiopica*.
20. Maxilla and maxillary palpus of *Ponera Æthiopica*.
21. Labium and labial palpi of *Ponera scalprata*.
22. Maxilla and maxillary palpus of *Ponera scalprata*.
23. *Ponera crudelis*, worker.
24. Abdomen of *Ponera crudelis*, worker.
25. *Ponera pedunculata*, worker.

PLATE VII.

1. Head of *Plectroctena mandibularis*, worker.
2. Labium and labial palpi of *Plectroctena mandibularis*, worker.
3. Maxilla and maxillary palpus of *Plectroctena mandibularis*, worker.
4. Mandible of *Plectroctena mandibularis*, worker.
5. Abdomen and node of the petiole of *Plectroctena mandibularis*, worker.
6. Labium and labial palpi of *Paraponera clavata*, worker.
7. Maxillæ and maxillary palpi of *Paraponera clavata*, worker.
8. Maxillary palpus of *Paraponera clavata*, worker.
9. Wing of *Paraponera clavata*, female.
10. *Ectatomma tuberculata*, female.
11. Labium and labial palpi of *Ectatomma tuberculata*, female.
12. Maxilla and maxillary palpus of *Ectatomma tuberculata*, female.

Fig.

13. Wing of *Ectatomma tuberculata*, female.
14. Head, thorax and abdomen of *Pachycondyla crassinoda*, ♀.
15. Antennæ of *Pachycondyla crassinoda*, female.
16. Wing of *Pachycondyla crassinoda*, female.
17. Abdomen of *Pachycondyla simillima*, female.
18. Wing of *Pachycondyla simillima*, female.
19. Labium and labial palpi of *Pachycondyla crassinoda*, female.
20. Maxilla and maxillary palpus of *Pachycondyla crassinoda*, female.
21. *Amblyopone Australis*, female.
22. Wing of *Amblyopone Australis*, female.
23. Male of *Amblyopone Australis*.
24. Antennæ of *Amblyopone Australis*, male.

PLATE VIII.

1. *Anomma arcens*, worker major.
2. Head of *Anomma Burmeisteri*, worker.
3. Head of *Anomma arcens*, worker.
4. *Typhlopone levigata*, worker.
5. Wing of *Myrmica scabrinodis*, female.
6. Maxillary palpus of *Myrmica scabrinodis*.
7. Labial palpus of *Myrmica scabrinodis*.
8. Wing of *Myrmica lævinodis*.
9. Antennæ of *Myrmica scabrinodis*, male.
10. Antennæ of *Myrmica scabrinodis*, worker.
11. Mandible of *Myrmica scabrinodis*.
12. Antennæ of *Myrmica lobicornis*, worker.
13. Wing of *Myrmica nitidula*, female.
14. Antennæ of *Myrmica nitidula*.
15. Wing of *Myrmica cæspitum*, female.
16. Antennæ of *Myrmica cæspitum*, worker.
- 16 a. Maxillary palpus of *Myrmica acervorum*.
17. Labial palpus of *Myrmica acervorum*.
18. Mandible of *Myrmica acervorum*.
19. Antennæ of *Myrmica acervorum*.
20. Labium and labial palpi of *Myrmica sublævis*.
21. Maxilla and maxillary palpus of *Myrmica sublævis*.
22. Mandible of *Myrmica sublævis*.
23. Another view of the mandible of *Myrmica sublævis*.
24. Antennæ of *Myrmica sublævis*.
25. Wing of *Myrmica fugax*, female.
26. Antennæ of the male of *Myrmica fugax*.
27. Maxillary palpus of *Myrmica fugax*.
28. Labial palpus of *Myrmica fugax*.

PLATE IX.

Fig.

1. *Crematogaster inflatus*, worker.
2. Wing of *Crematogaster castaneus*, ♀.
3. Wing of *Crematogaster scutellaris*, ♀.
4. Labial palpus of *Crematogaster sordidulus*, ♂.
5. Maxillary palpus of *Crematogaster sordidulus*, ♂.
6. Antennæ of *Crematogaster sordidulus*, ♂.
7. Thorax and abdomen of *Crematogaster scutellaris*, ♂.
8. Wing of *Myrmecina Latreillei*, ♀.
9. Mandible of *Myrmecina Latreillei*.
10. Antennæ of *Myrmecina Latreillei*.
11. Maxillary palpus of *Myrmecina Latreillei*.
12. Labial palpus of *Myrmecina Latreillei*.
13. *Pheidole Janus*, ♂ major.
14. Mandible of *Pheidole Janus*.
15. *Pheidole Janus*, ♂ minor.
16. Mandible of *Pheidole Janus*, ♂ minor.
17. Antennæ of *Atta Janus*, ♂ major.
18. Maxillary palpus of *Pheidole pusilla*, ♂.
19. Labial palpus of *Pheidole pusilla*, ♂.
20. Wing of *Pheidole pusilla*, ♀.
21. *Pheidole cephalica*, ♂ major.
22. " " ♂ minor.
23. Mandible of *Pheidole cephalica*, ♂ minor.
24. Wing of *Atta barbara*, ♀.
25. Labial palpus of *Atta testaceo-pilosa*, ♂.
26. Maxillary palpus of *Atta testaceo-pilosa*, ♂.

PLATE X.

1. Wing of *Myrmecia pyriformis*, ♀.
2. Antennæ of *Myrmecia pyriformis*, ♀.
3. Mandible of *Myrmecia pyriformis*, ♀.
4. Head of *Myrmecia pyriformis*, ♀.
5. Abdomen of *Myrmecia pyriformis*, ♀.
6. *Myrmecaria brunnea*, ♀.
7. Labial palpi of *Myrmecaria brunnea*, ♀.
8. Maxillary palpi of *Myrmecaria brunnea*, ♀.
9. Profile of *Physatta dromedarius*, ♀.
10. Wing of *Physatta dromedarius*, ♀.
11. Antennæ of *Physatta dromedarius*, ♀.
12. *Carebara lignata*, ♀.
13. Labial palpi of *Carebara lignata*, ♀.
14. Maxillary palpus of *Carebara lignata*, ♀.
15. Antennæ of *Carebara lignata*, ♀.

Fig.

16. Wing of *Ecodoma cephalotes*, ♀.
17. Profile of *Ecodoma aspersa*, ♀.
18. " " *hystrix*, ♀.
19. " " *sexdentata*, ♀.
20. Abdomen of *Ecodoma Mexicana*, ♀.
21. " " *cephalotes*, ♀.
22. " " *abdominalis*, ♀.
23. Head of *Ecodoma cephalotes*, worker major.
24. " " *levigata*, worker minor.
25. Head and thorax of *Pseudomyrma cephalica*, ♀.
26. Abdomen of *Pseudomyrma cephalica*, ♀.

PLATE XI.

1. *Cryptocerus discocephalus*, ♂.
2. " " worker major.
3. " " worker minor.
4. Mandible of *Cryptocerus atratus*, ♀.
5. Labial palpi of *Cryptocerus atratus*, ♀.
6. Maxillary palpus of *Cryptocerus atratus*, ♀.
7. *Cryptocerus serraticeps*, ♀.
8. " *minutus*, worker minor.
9. " *pusillus*, ♀.
10. *Cataulacus parallelus*, ♀.
11. Head of *Cataulacus Taprobanæ*, ♀.
12. Thorax of *Cataulacus Taprobanæ*, ♀.

PLATE XII.

1. Head of *Meranophus*, ♀.
2. " *Cataulacus*, ♀.
3. *Cryptocerus minutus*, worker major.
4. " *angulatus*, ♀.
5. *Meranophus petiolatus*, ♀.
6. Antennæ of *Meranophus petiolatus*, ♀.
7. *Meranophus gracilis*, ♀.
8. " *difformis*, ♀.
9. Antennæ of *Meranophus difformis*.
10. " *Cataulacus horridus*.
11. " *Meranophus bicolor*.
12. *Cryptocerus obtusus*, ♀.

PLATE XIII.

1. *Polyrhachis bispinosus*, ♀.
2. Scale of the petiole, viewed in front.
3. Lateral view of the same.

Fig.

4. *Formica solitaria*, ♀.
5. Head of *Formica solitaria*.
6. *Meranophus singularis*, ♀.
7. Antennæ of *Meranophus singularis*, ♀.
8. Head of *Meranophus singularis*, ♀.
9. Antennæ of *Meranophus singularis*, ♀.
10. Mandible of *Meranophus singularis*, ♀.
11. *Pseudomyrma faber*, ♀.
12. " *cladoica*, ♀.
13. " *vidua*, ♂.
14. *Cryptocerus striatus*, ♀.

PLATE XIV.

Nest of *Crematogaster arboreus*, with a portion of the outer shell or covering removed at the lower extremity, to show the character of the interior structure: drawn one-third of the natural size.

ERRATA.

Alter the numbers of the Subfamilies as follows:—

- Page 1. Family FORMICIDÆ.
 „ 76. Subfamily 1. PONERIDÆ.
 „ 114. Subfamily 2. MYRMICIDÆ.

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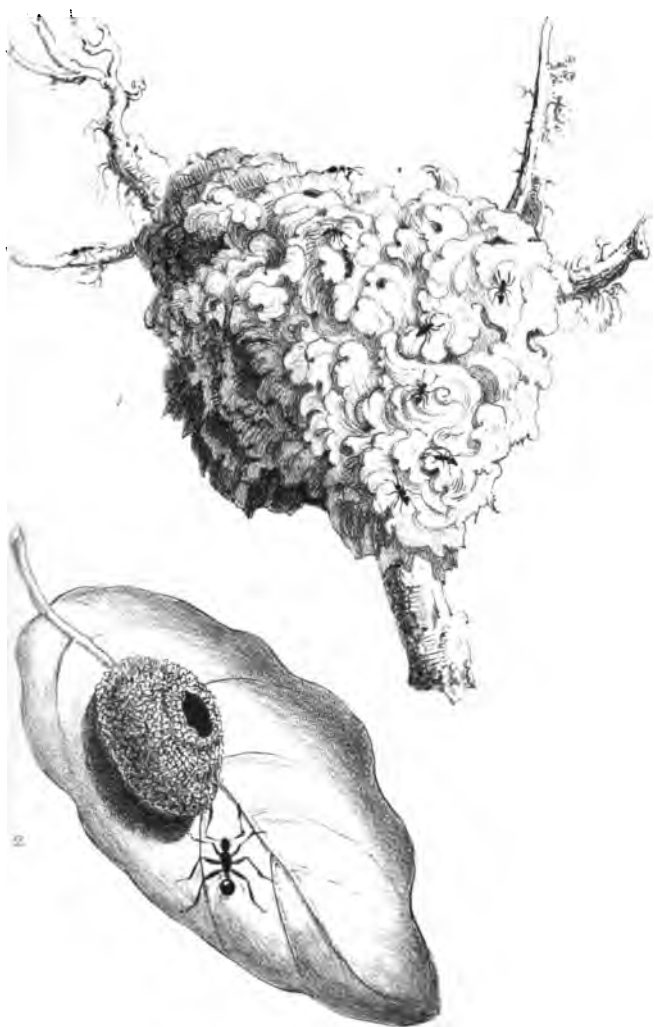
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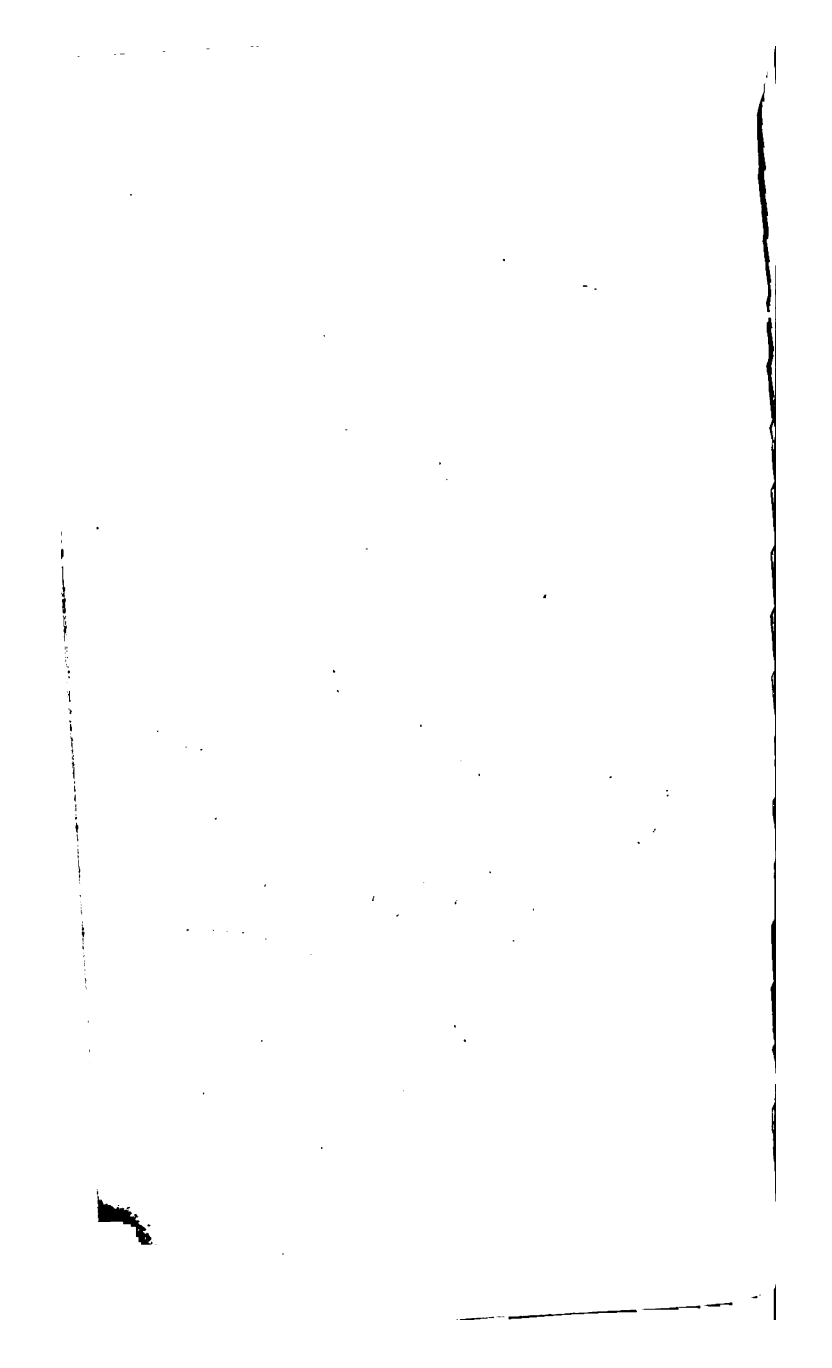
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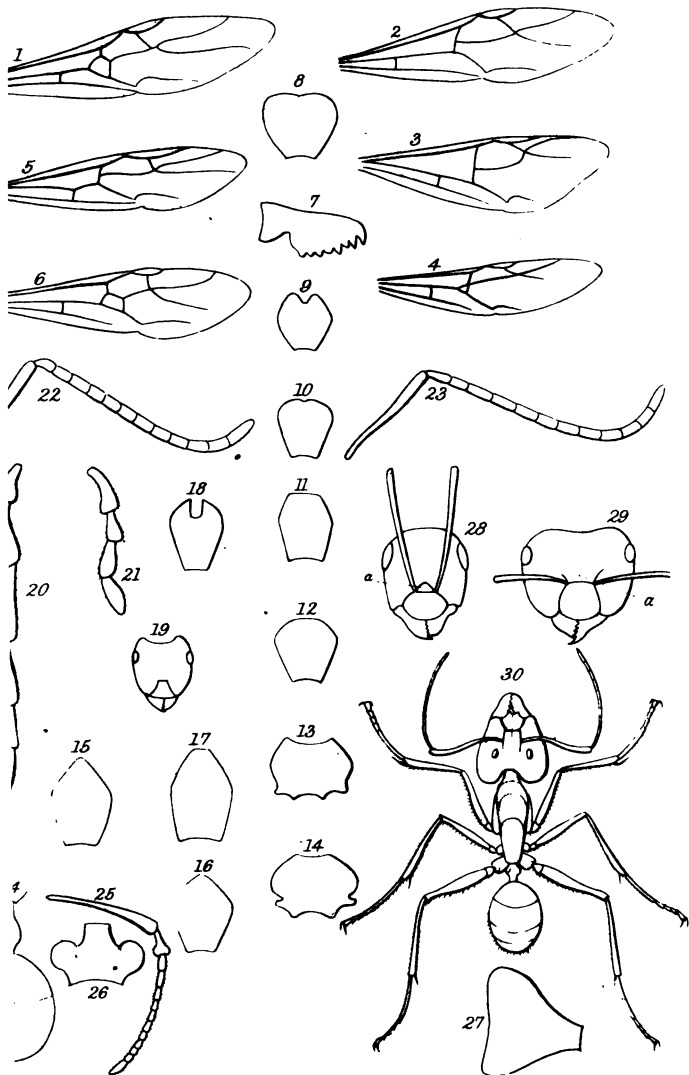
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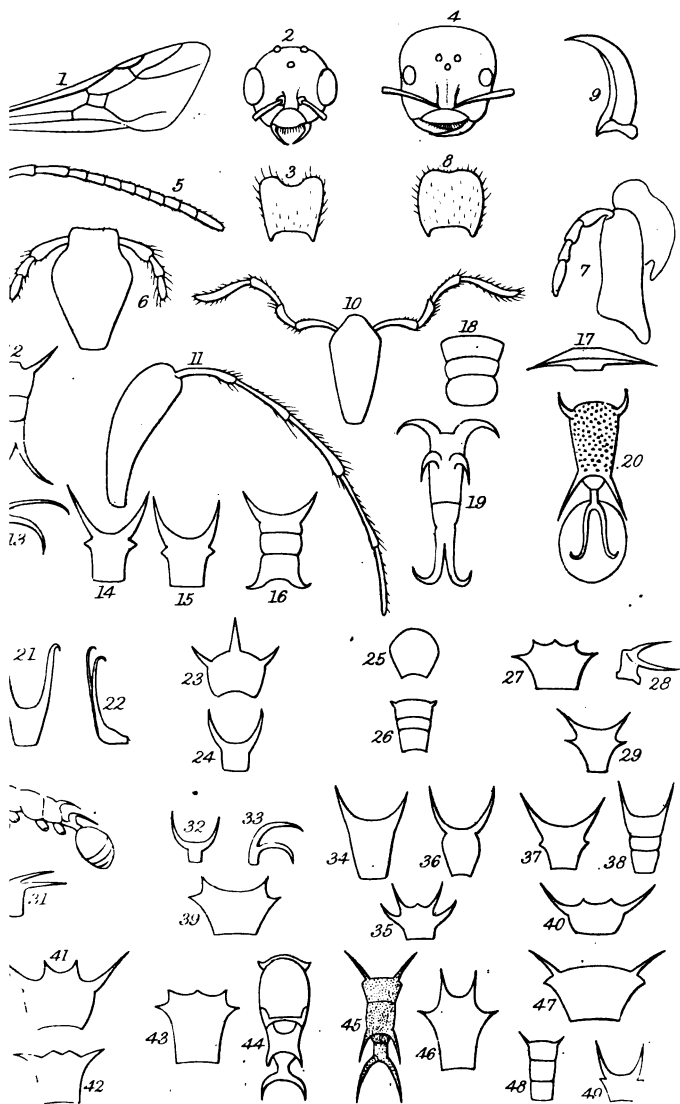
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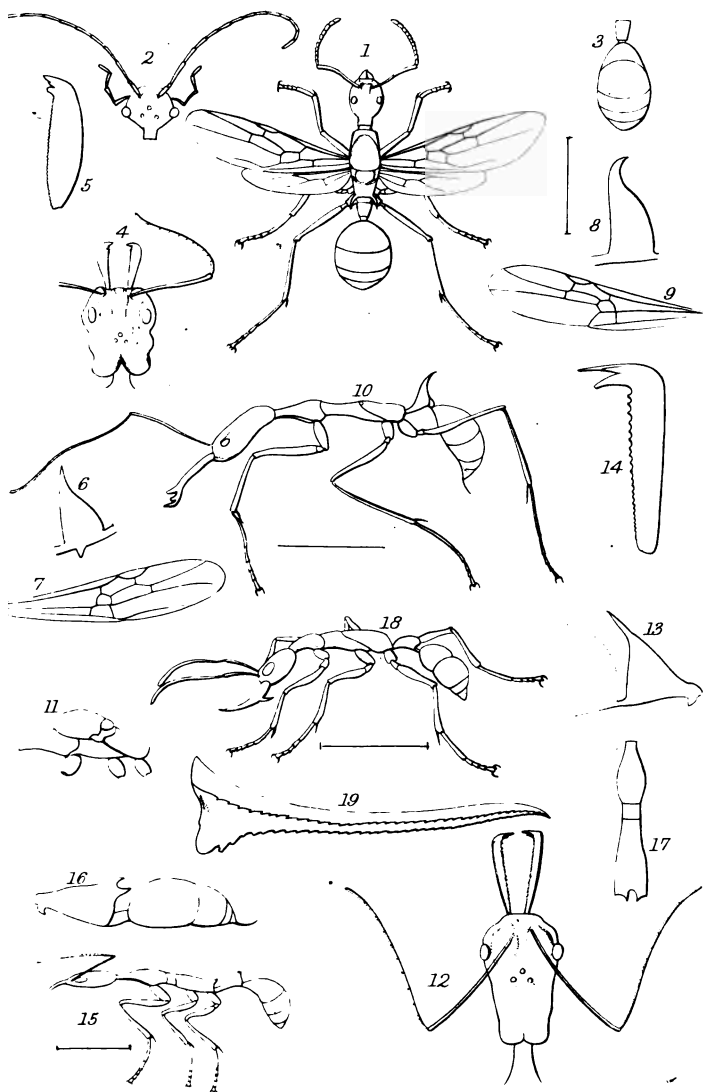


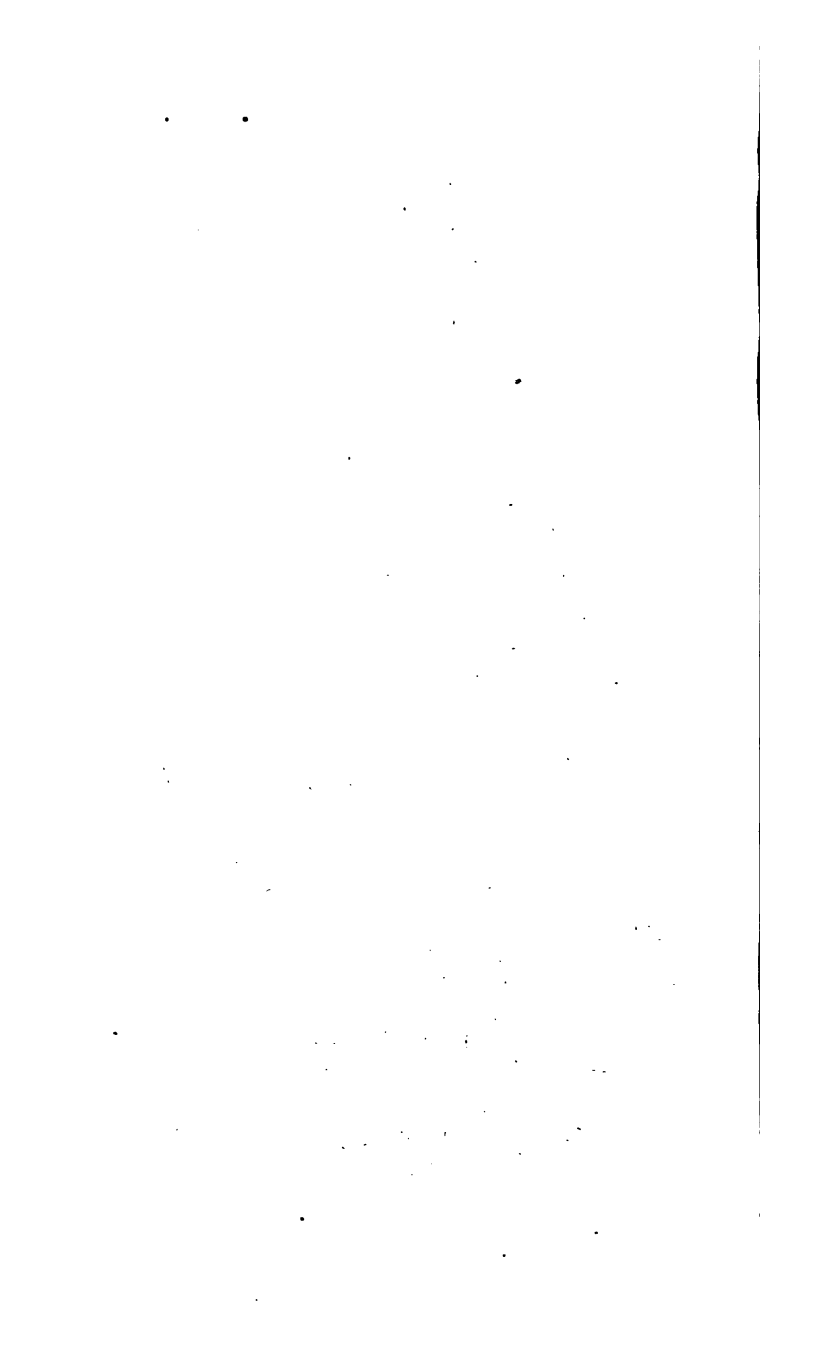


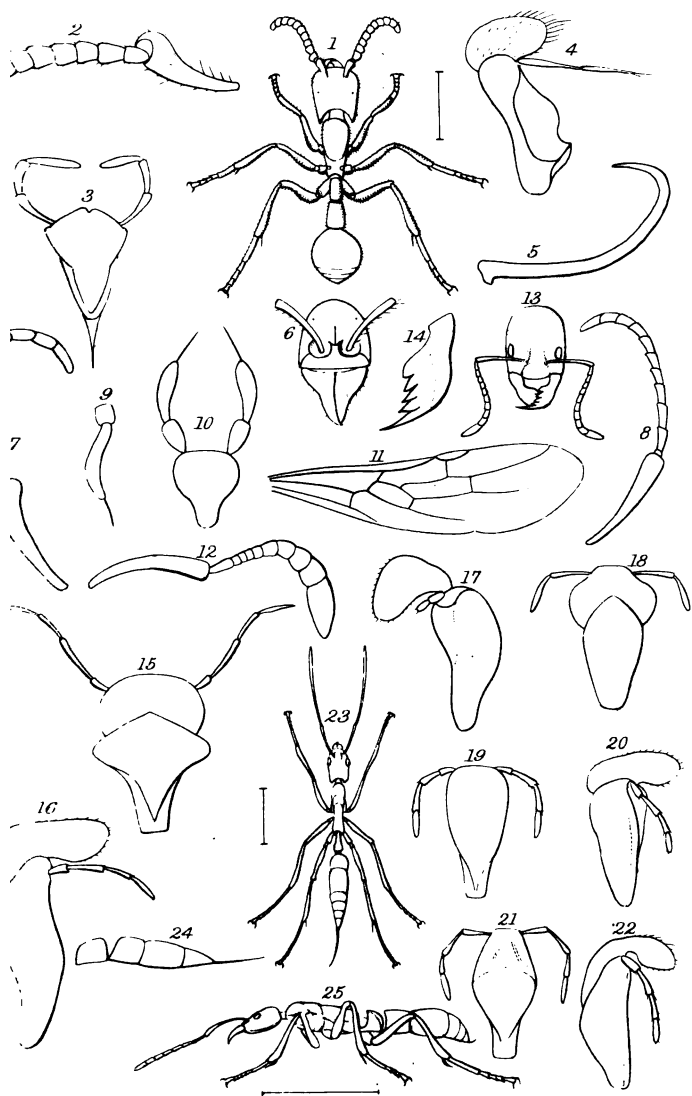


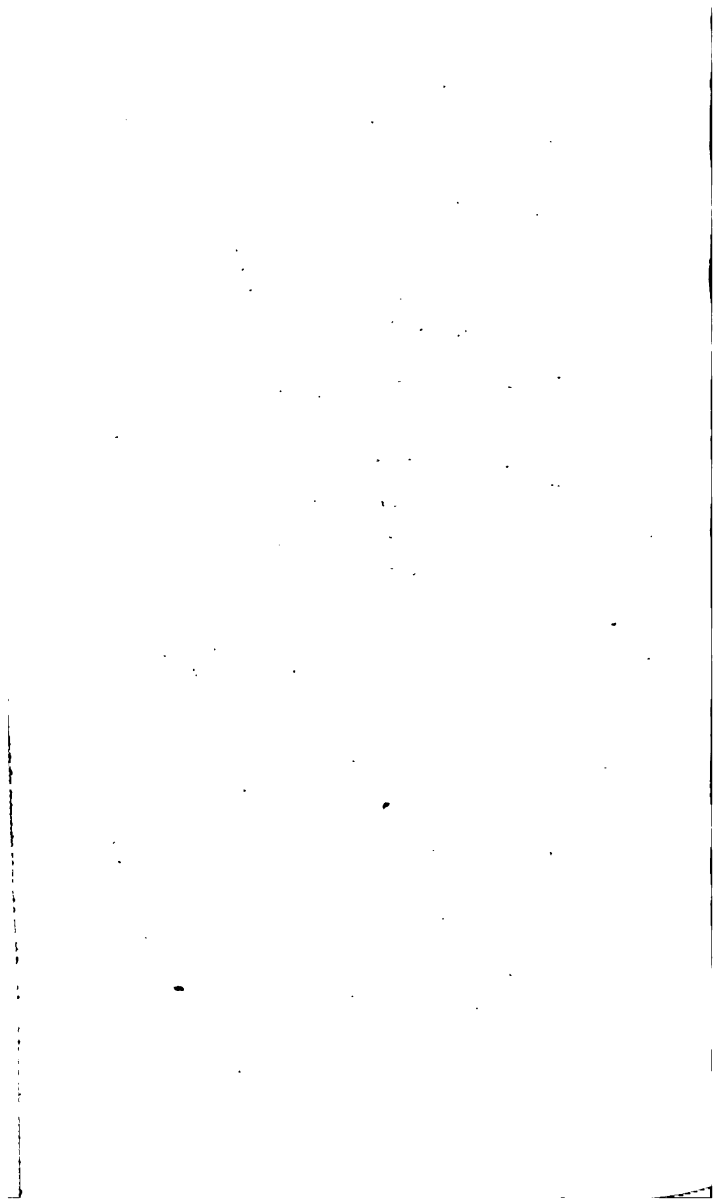


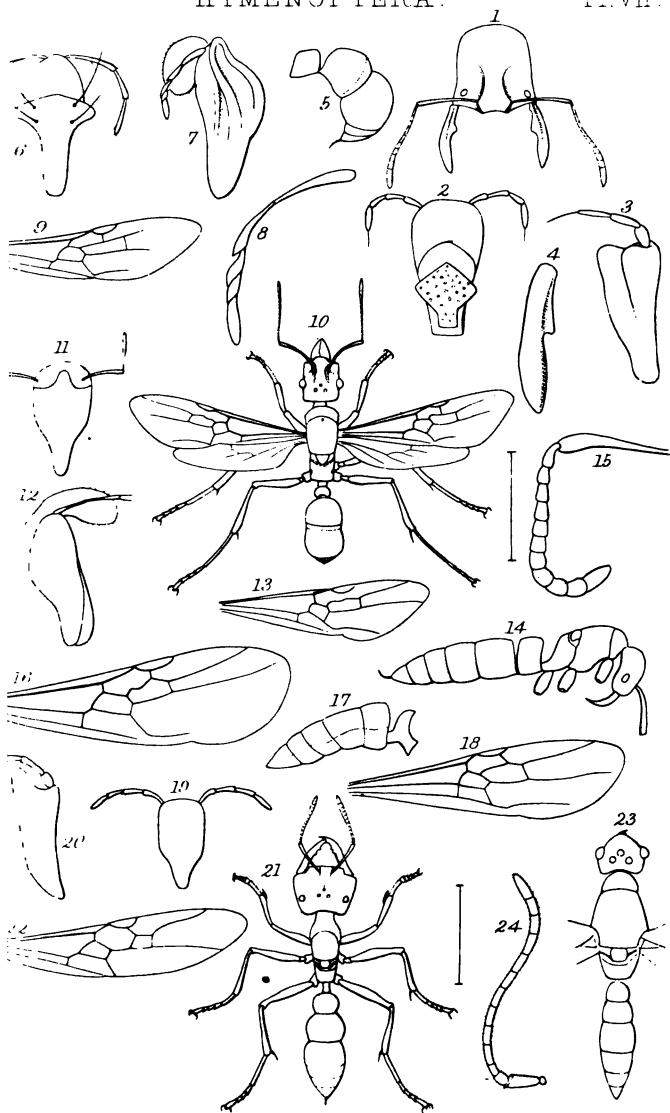


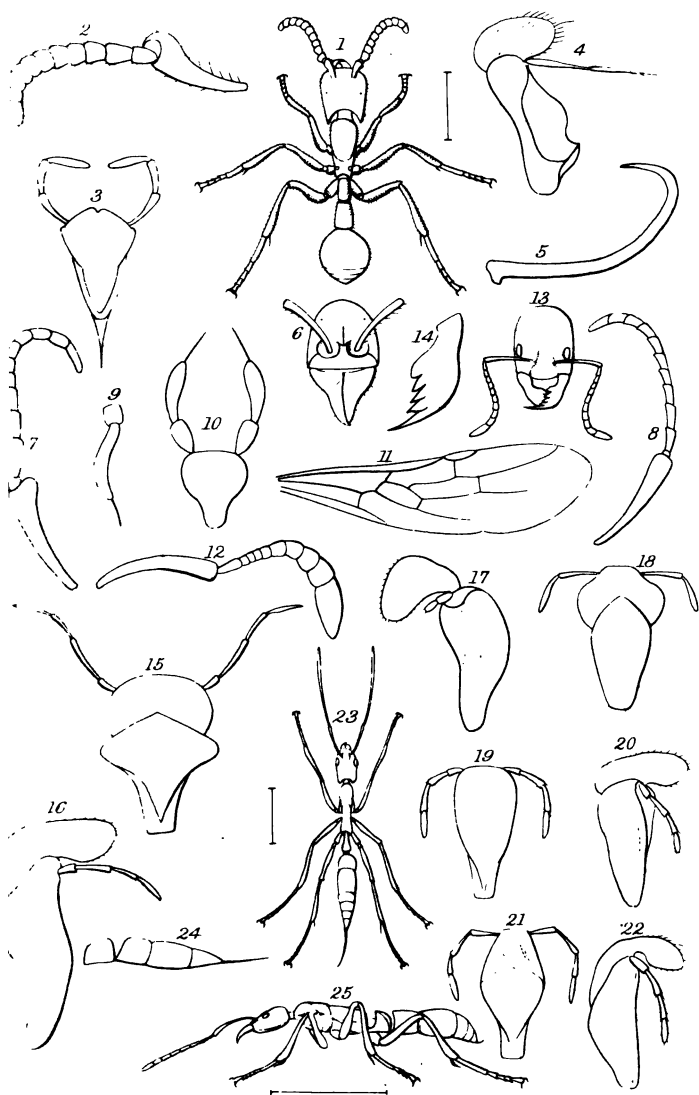


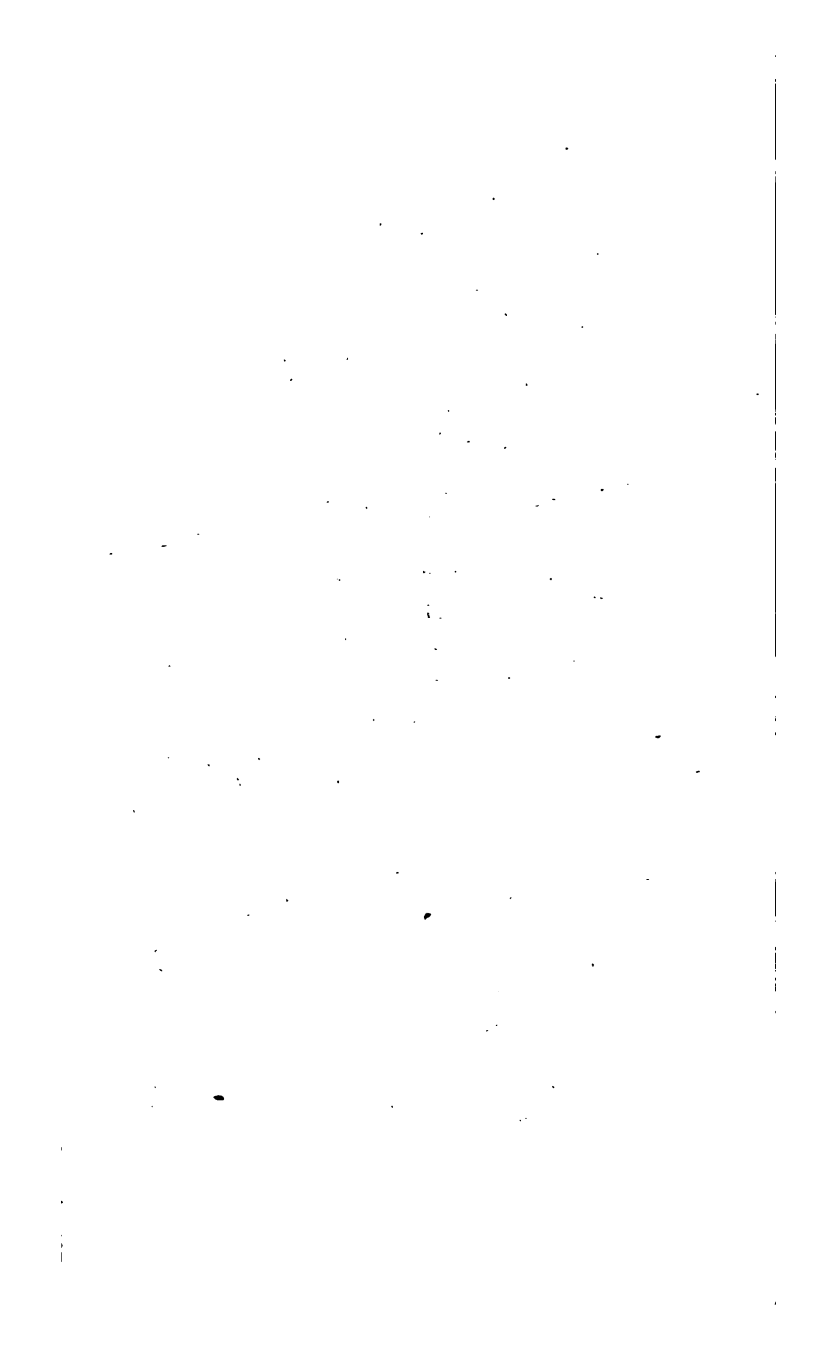


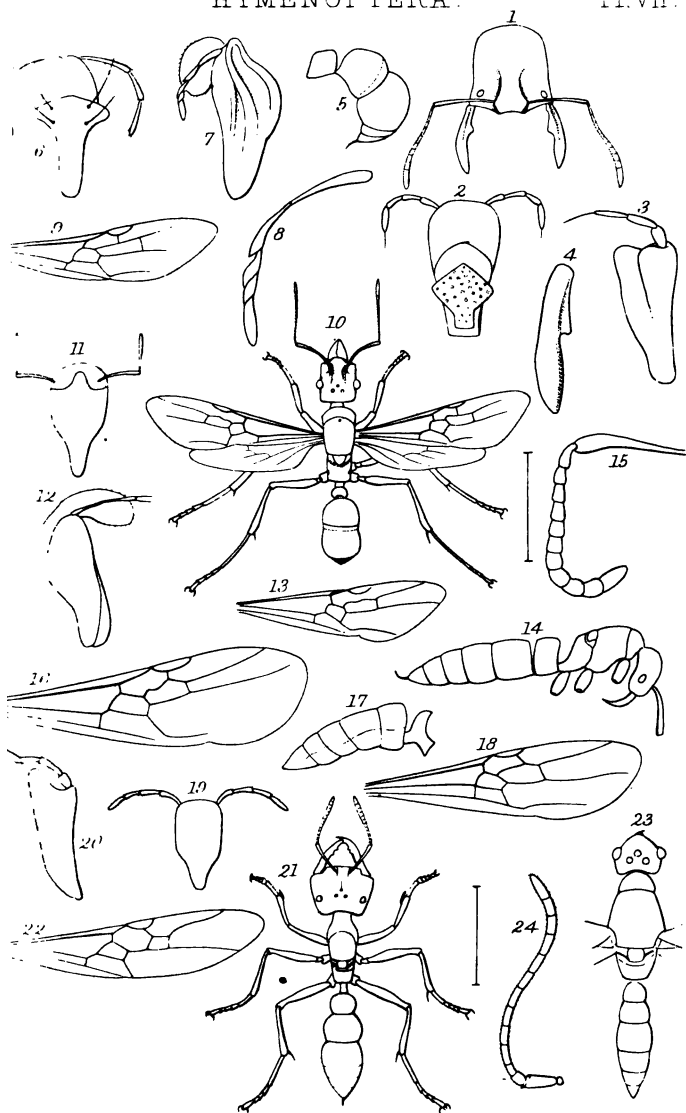












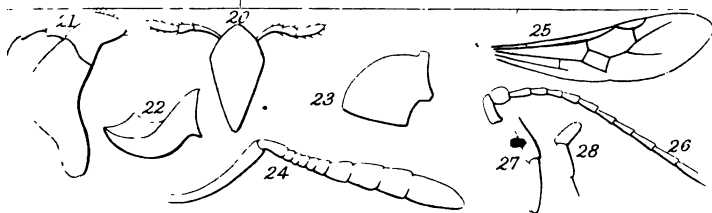
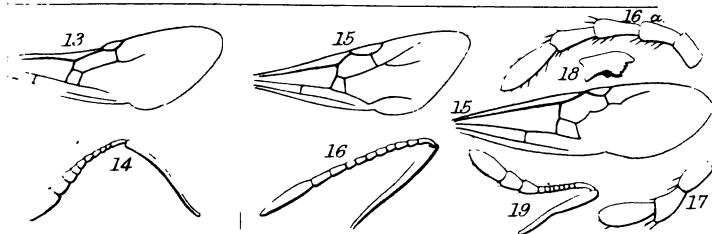
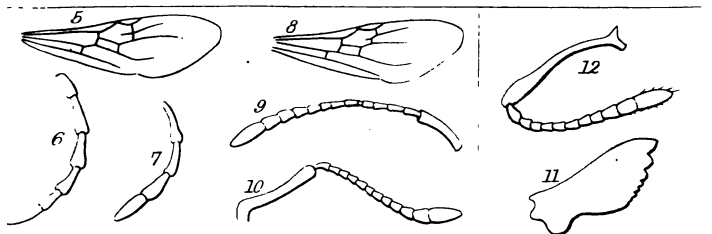
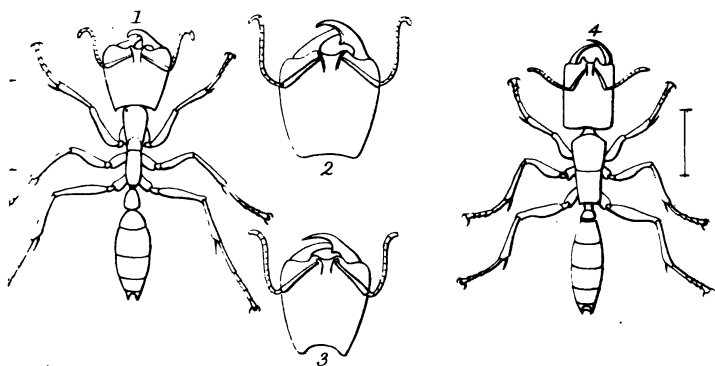
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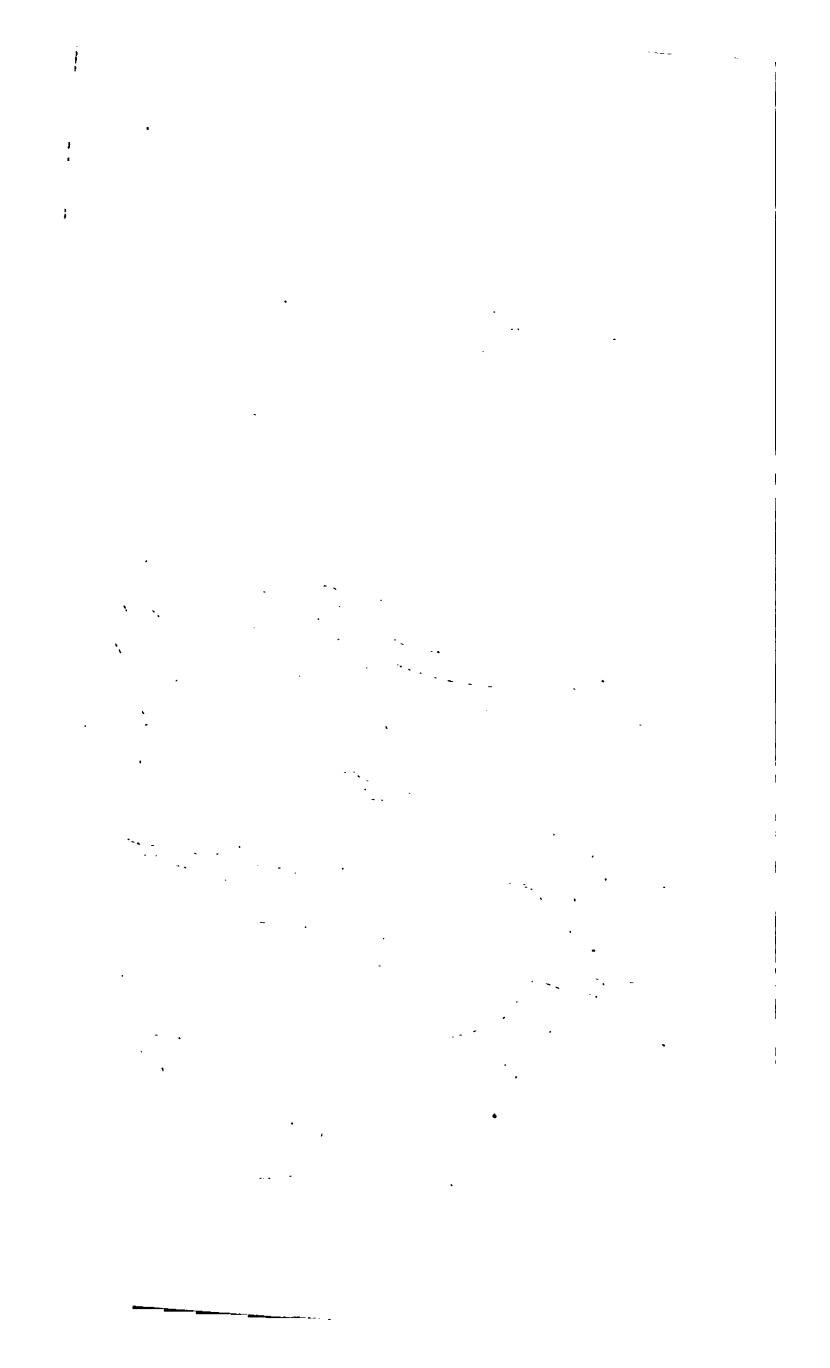
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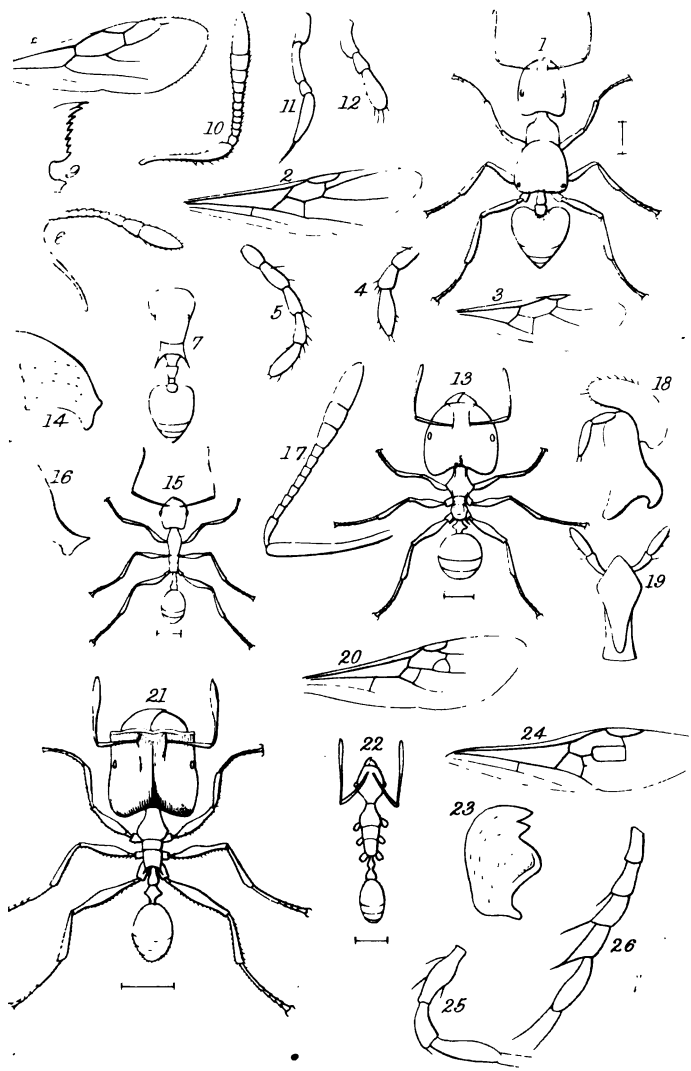
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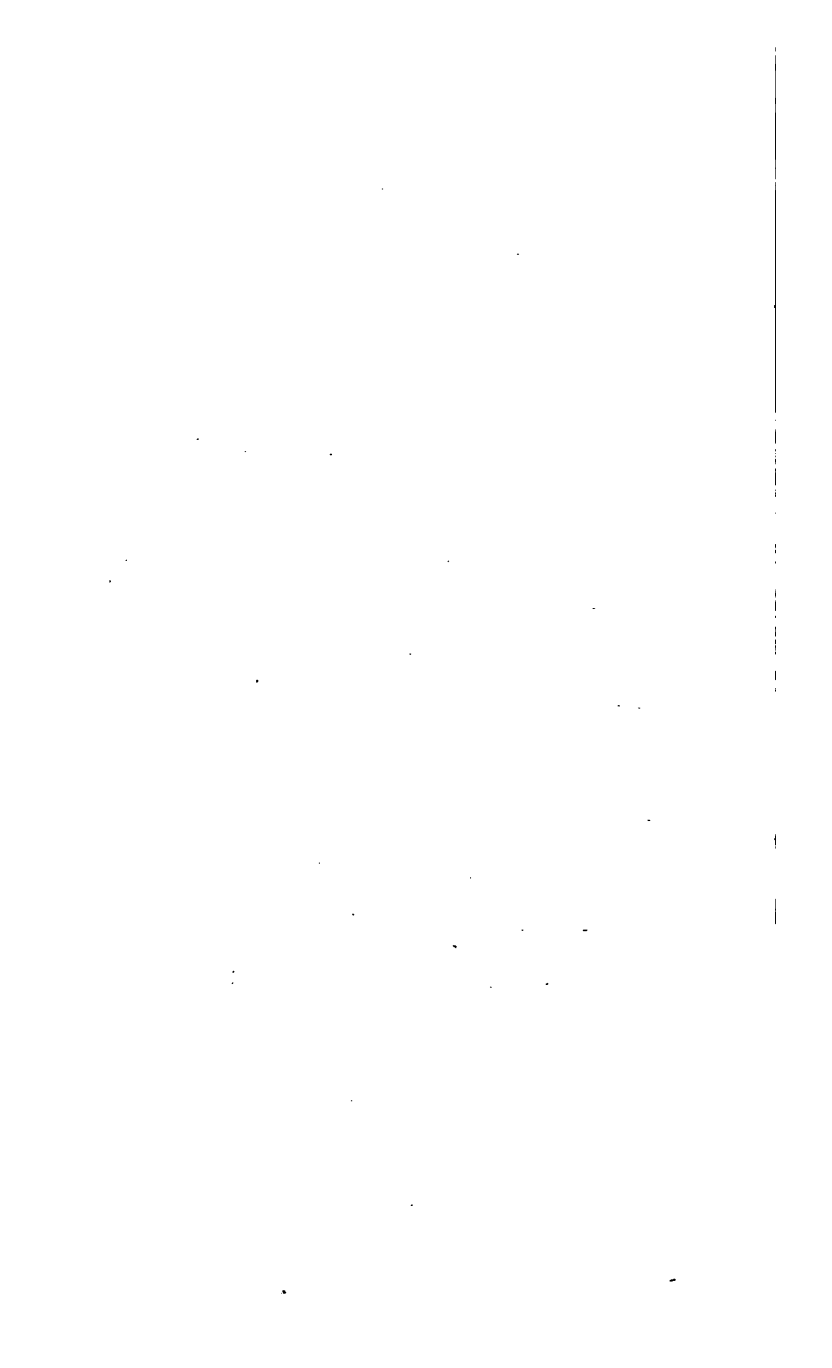
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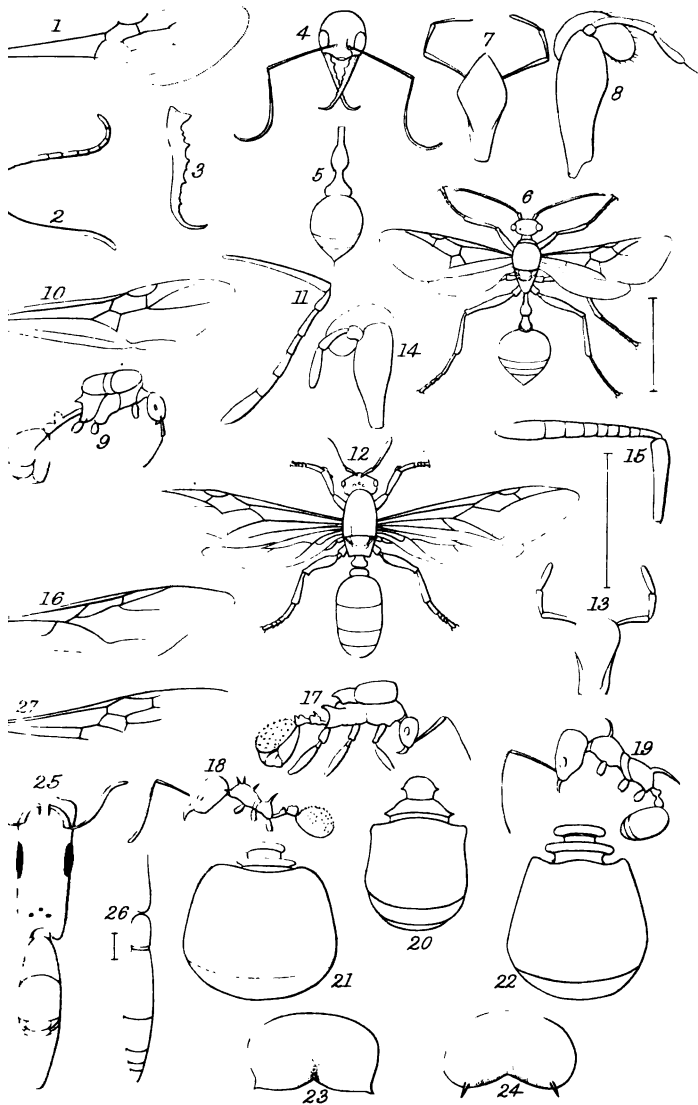
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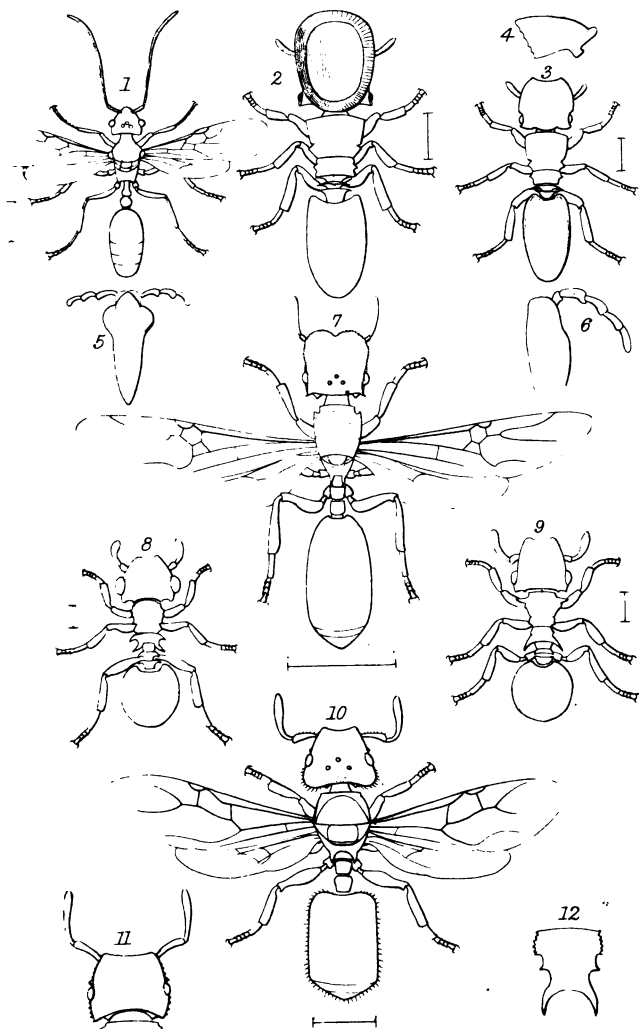


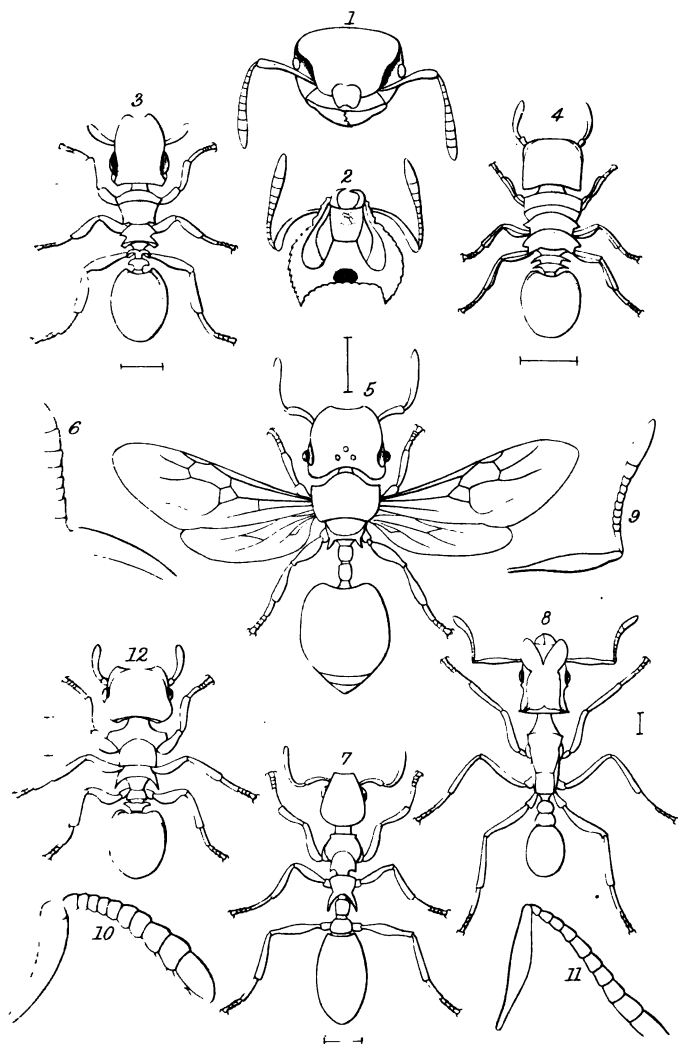


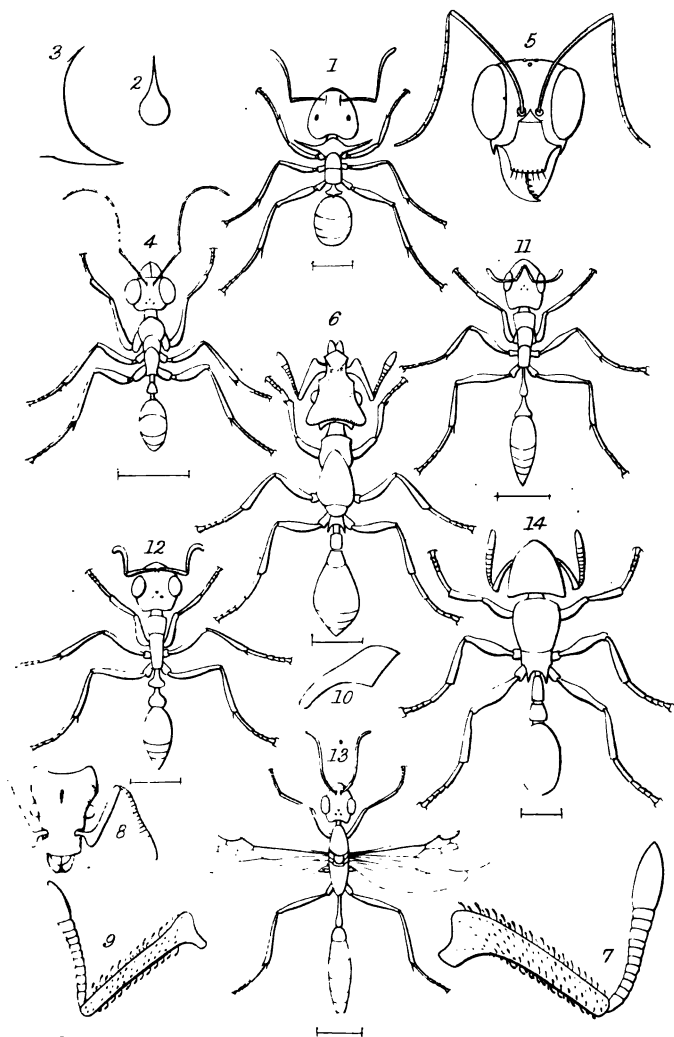


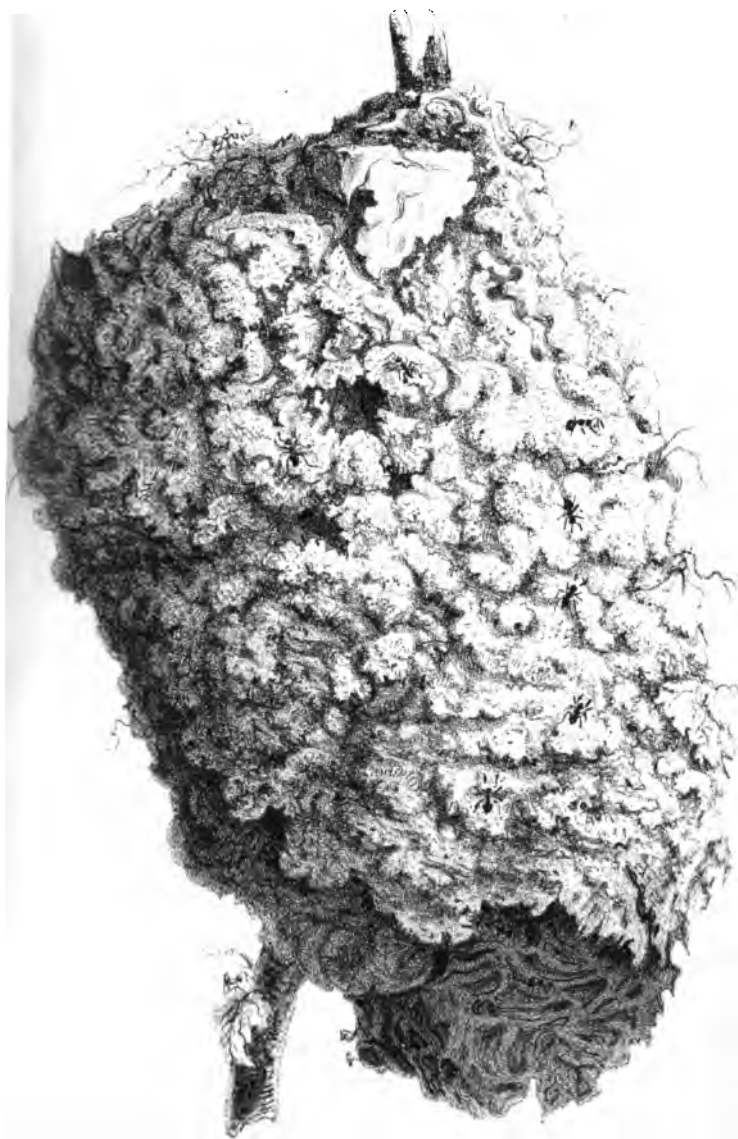












CATALOGUE
OF
HYMENOPTEROUS INSECTS
IN
THE COLLECTION
OF THE
BRITISH MUSEUM.

BY
FREDERICK SMITH, V.P. ENT. SOC.

PART VII.
DORYLIDÆ AND THYNNIDÆ.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1859.

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RED LION COURT, FLEET STREET.

P R E F A C E.

THE object of the present Catalogue is to give a complete list of all the known genera and species of DORYLIDÆ and THYNNIDÆ, including those which have been previously recorded, together with descriptions of such as appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species contained in the Collection of the British Museum.

JOHN EDWARD GRAY.

1st June, 1859.

CATALOGUE
OF
HYMENOPTERA.

DIV. II. ACULEATA.

Tribe HETEROGYNA, *Latr.*

Family 5. DORYLIDÆ, *Shuck.*

Genus 1. DORYLUS.

Vespa, pt., *Linn. Mus. Lud. Ulric. Reg.* p. 409 (1764).

Mutilla, pt., *Linn. Syst. Nat.* i. 967 (1766).

*Dorylus**, *Latr. Hist. Nat. Ins.* xiii. 260 (1802).

SECT. 1.—*Peduncle cup-shaped, much smaller than the second segment.*

1. DORYLUS HELVOLUS.

B.M.

Vespa helvola, *Linn. Mus. Lud. Ulric. Reg.* 412. 5.

Mutilla helvola, *Linn. Syst. Nat.* i. 967. 8.

Fabr. Mant. i. 313. 18.

Christ. Naturg. der Bienen, &c., 151.

Dorylus helvolus, *Fabr. Ent. Syst.* ii. 365. 1; *Syst. Piez.* 427. 1.

Coqueb. Icon. dec. 2. pl. 16. f. 1.

* This genus at present consists of males only. Dr. Savage considers the other sexes as constituting the genus *Anomma*; this, however, requires confirmation.

Dorylus helvolus, *Latr. Hist. Nat.* xiii. 260; *Gen. Crust. et Ins.* iv. 124.

Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 315. 2 (1840).

Westw. Arc. Ent. i. 79. 2.

Hab. Cape of Good Hope (Port Natal).

2. DORYLUS AFFINIS.

B.M.

Dorylus affinis, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 316. 3 (1840).

Westw. Arc. Ent. i. 79. 3.

Hab. Africa (Gambia).

SECT. 2.—*Peduncle cup-shaped, nearly as large as the following segment.*

3. DORYLUS NIGRICANS.

B.M.

Dorylus nigricans, *Illig. Mag.* i. 188. 18.

Fabr. Syst. Piez. 427. 2.

Latr. Gen. Crust. et Ins. iv. 124; *Nouv. Dict. d'Hist. Nat.* 2nd ed. 9. 556.

Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 271. 1 (1840).

Westw. Arc. Ent. i. 79. 1.

Hab. Sierra Leone.

SECT. 3.—*Peduncle quadrate; mandibles slender and much acuminate.*

4. DORYLUS GLABRATUS.

B.M.

Dorylus glabratus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 317. 4 (1840).

Westw. Arc. Ent. i. 79. 4.

Hab. Africa (Gambia).

5. DORYLUS JUVENCULUS.

B.M.

Dorylus juvenculus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 318. 5 (1840).

Westw. Arc. Ent. i. 80. 5.

Hab. Barbary.

6. DORYLUS LABIATUS.

B.M.

Dorylus labiatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 319. 6 (1840).

Westw. Arc. Ent. i. 80. 6.

Hab. India (Poonah and Assam).

7. DORYLUS HINDOSTANUS. Plate I. fig. 1.

Length 1 inch.—Rufo-fuscous, smooth, and covered with fine glittering downy pile: mandibles slender and acuminate at the apex; the face, base of the mandibles, the coxæ, and apex of the abdomen with long curling pale yellow hair; face and forehead slightly prominent; the ocelli in an equilateral triangle, the face deeply sulcated in front of the anterior one; the antennæ setaceous, the scape about half the length of the flagellum. Thorax gibbous in front, the scutellum transverse; the metathorax abruptly truncated, the margin of the truncation fringed with pale hairs; wings hyaline, nervures brown, the radial nervure extending a little beyond the inner angle of the marginal cell; the legs castaneous. Abdomen elongate and cylindrical, the peduncle quadrate-convex; compressed beneath into a subtriangular form; the peduncle much narrower than the following segment; the terminal segment very pilose.

Hab. India (Punjaub).

This species is most closely allied to the *D. Juvenculus*, Shuck., but may be distinguished by the different form of the under side of the peduncle; its forehead is less convex, and its peduncle narrower in proportion to the following segment.

SECT. 4.—*Peduncle quadrate; mandibles broad and nearly triangular.*

8. DORYLUS ORIENTALIS.

B.M.

Dorylus Orientalis, Westw. *Proc. Zool. Soc.* 1835, p. 72.

Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 320. 7 (1840).

Westw. Arc. Ent. i. 80. 7.

Hab. India (Bengal).

9. DORYLUS LONGICORNIS.

B.M.

Dorylus longicornis, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 321. 8 (1840).

Westw. Arc. Ent. i. 80. 8.

Hab. India (Bengal).

10. DORYLUS ATTENUATUS.

Dorylus attenuatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 322. 9 (1840).

Westw. Arc. Ent. i. 80. 9.

Hab. Africa (Gambia?). (Coll. F. Smith.)

11. DORYLUS ATRICEPS.

Dorylus atriceps, *Shuck. Ann. Nat. Hist.* 1st ser. v. 323. 10 (1840).
Westw. Arc. Ent. i. 80. 10.

Hab. Africa (Gambia). (Coll. F. Smith.)

SECT. 5.—*Peduncle cup-shaped, as large as the following segment; the mandibles broad and nearly triangular.*

12. DORYLUS ATRATUS.

Length 9 lines.—Black, with a silky brown pubescence; elongate and cylindrical: head as wide as the thorax; the ocelli in a triangle on the vertex, which is very convex; antennæ short and setaceous, the scape more than half the length of the flagellum. Thorax: the mesothorax with an impressed longitudinal line on each side, two-thirds of its entire length, terminating at the base of the scutellum; wings blackish brown, with a slight violet iridescence, the nervures black; the recurrent nervure inserted a little beyond the middle of the first submarginal cell; femora elongate, triangular, much narrowed at the apex. Abdomen cylindrical; the peduncle cup-shaped, nearly as large as the second segment, its posterior margin rounded; beneath compressed into an angular form, and densely pubescent.

Hab. Old Calabar. (Coll. F. Smith.)

Genus 2. RHOGMUS.

Rhogmus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 323. 4 (1840).

1. RHOGMUS FIMBRIATUS. Plate I. fig. 2. B.M.

Rhogmus fimbriatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 325. 1 (1840).

Westw. Arc. Ent. i. 80. 1.

Hab. Africa (Gold Coast; Gambia).

Genus 3. LABIDUS*.

Labidus, *Jurine, Hym.* p. 282 (1808).

SECT. 1.—*Peduncle of the abdomen subtriangular and concave above.*

1. LABIDUS FARGEAVII.

Labidus Fargeavii, *Shuck. Ann. Nat. Hist.* 1st ser. v. 198. 1 (1840).

* The females of this genus are not known. Mr. Shuckard has indicated their probable connexion with the genus *Typhlopone*.

Labidus Fargeavii, *St. Farg. Hym.* i. 229, nec *Jurine*.
Westw. Arc. Ent. i. 74. 1.

Hab. Brazil (St. Catherine).

2. *LABIDUS JURINII*.

Labidus Jurinii, *Shuck. Ann. Nat. Hist.* 1st ser. v. 198. 2 (1840).
Westw. Arc. Ent. i. 75. 3.

Hab. South America (Demerara); Brazil.

3. *LABIDUS BURCHELLII*. Plate I. fig. 3.

Labidus Burchellii, *Westw. Arc. Ent.* i. 74. 2. pl. 20. f. 1.

Hab. Brazil (Santos).

4. *LABIDUS LATREILLII*.

Labidus Latreillii, *Jurine, Hym.* p. 282.

Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 199. 3 (1840).

Westw. Arc. Ent. i. 75. 4.

Latr. Gen. Crust. et Ins. iv. 123; *Nouv. Dict. d'Hist. Nat.*
 2nd ed. xvii. 141.

Hab. Brazil; Demerara?; Cayenne.

5. *LABIDUS SERVILLEI*.

Labidus Servillei, *Westw. Arc. Ent.* i. 75. 5. pl. 20. f. 2.

Hab. Brazil (Para).

6. *LABIDUS ATRICEPS*.

Length 7 lines.—Body reddish, pubescent; head black; the face anteriorly, and the ridges between the antennæ at their base, the mandibles and antennæ, rufo-testaceous; the ocelli of glassy brightness, and placed in a triangle on the vertex. The anterior wings fulvo-hyaline, with the nervures brownish red; the thorax punctured above, not very closely so; on each side an impressed line runs from the scutellum nearly to the anterior margin of the mesothorax; the posterior tibiæ as wide as the femora, narrowed at the base, two-thirds of their length towards the apex of the same width, and narrowed from thence to the base; the basal joint of the tarsi broadest at the base. Abdomen curved; the peduncle of a subtriangular shape above, concave, with the margins raised, and smooth and shining. The insect covered with a fulvous pubescence.

Hab. Brazil (Ega, on the Amazons).

I have scarcely a doubt of this being the *Labidus Latreillii*, although in one particular it somewhat differs. In the original description of the 'Nouveau Dictionnaire d'Hist. Nat.,' the tibiæ

are described as increasing in thickness to their extremity, the spur at their apex broad at the base, as is also the basal joint of the tarsi. In the insect described, the tibiæ are of equal thickness two-thirds of their length; in other respects they perfectly agree.

7. LABIDUS MOROSUS.

Male. Length 9 lines.—Brown-black, covered with fine brown silky pubescence: the ocelli placed in a curve on the vertex, not smaller than in the other species, the space between the posterior pair smooth and shining and slightly concave; the antennæ, mandibles, and legs rufo-testaceous; the mandibles long and very slender. Thorax oblong-ovate, gibbous in front and at the scutellum; wings brown, the nervures brown-testaceous; the marginal cell acute at the base and apex, extending beyond the second submarginal cell one-third of its length; the second submarginal cell narrow, receiving the recurrent nervure one-third from its base; the legs slender, covered with long hair. Abdomen with the margin of the segments slightly constricted, and rufo-testaceous; the apex of the abdomen and the ventral segments with long fine hair; the peduncle transverse; concave above, the lateral posterior angles prominent and obtuse; the apical segment compressed vertically; the apical ventral plate furnished with two acute, stout, curved spines.

Hab. Mexico.

This species in some respects resembles *Labidus D'Orbignii*, described in Shuckard's 'Monograph;' but the size of the ocelli, form of the peduncle, and different neuration of the wings appear to characterize a distinct species.

8. LABIDUS AMPLIPENNIS.

Male. Length 7 lines.—Rufo-testaceous: the head fuscous; the ocelli large, glassy bright, placed on the hinder margin of the vertex in a slight curve; the face anteriorly, the labrum, and antennæ rufo-testaceous. Thorax very gibbous in front, as also at the scutellum; the metathorax perpendicularly truncate; wings ample, one-fourth longer than the entire insect; the nervures testaceous; the marginal cell lanceolate, acute at the apex, nearly as long as the first and second submarginals united; the first submarginal oblique-quadrate, its width half that of the lower margin of the second submarginal, the latter narrowed towards the marginal cell; the legs slender. Abdomen shining; the peduncle quadrate, slightly concave above, and of the same width as the abdomen; the apical segment fusco-ferruginous.

Hab. Bogota.

9. *LABIDUS PILOSUS*.

B.M.

Length $9\frac{1}{2}$ lines.—Rufo-testaceous: the head blackish, excepting the anterior margin of the face, the mandibles, and antennæ, which are of the same colour as the body. The thorax of a darker colour above than the abdomen, punctured and shining; the sides, the metathorax, and the legs with long pale pubescence; the wings hyaline, the nervures ferruginous; the mesothorax not gibbous in front. Abdomen covered with dense shining silky pile; the peduncle transverse, subtriangular, with the sides slightly rounded.

Hab. Brazil (St. Paul's). (Coll. H. W. Bates.)

10. *LABIDUS MEXICANUS*.

Length 6 lines.—Pale rufo-testaceous, covered with pale shining pubescence: eyes large, black, and prominent; the ocelli glassy bright; on each side of the anterior one an elevated carina, which passes between the antennæ to the anterior margin of the face, forming a deep smooth channel; the antennæ shorter than the thorax, stout, and tapering to a point at their apex. Thorax very gibbous in front and at the scutellum; the wings wanting. Abdomen: the margins of the segments slightly constricted; the peduncle transverse, the lateral margins not elevated, slightly convex in the middle.

Hab. Mexico (Orizaba).

SECT. 2.—*Peduncle of the abdomen more or less convex, transverse-quadrate.*

11. *LABIDUS ILLIGERI*.

Labidus Illigeri, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 397. *Append.* (1840).

Westw. Arc. Ent. i. 76. 8.

Hab. Brazil.

12. *LABIDUS HARTIGII*.

Labidus Hartigii, *Westw. Arc. Ent.* i. 75. 6. pl. 20. f. 3.

Hab. Brazil (Rio Janeiro and Sapé).

13. *LABIDUS ESENBECKII*.

Labidus Esenbeckii, *Westw. Arc. Ent.* i. 75. 7. pl. 20. f. 4.

Hab. Brazil (Rio Vendinha).

14. LABIDUS HALIDAI.

Labidus Latreillii, *Halid. Linn. Trans.* xvii. 328 (nec *Jurine*).

Labidus Halidai, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 200.
4 (1840).

Westw. Arc. Ent. i. 76. 9.

Hab. Brazil (St. Paul's). (Coll. W. W. Saunders, Esq.)

15. LABIDUS SWAINSONII.

Labidus Swainsonii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v.
201. 5 (1840).

Westw. Arc. Ent. i. 76. 11.

Hab. Brazil (Para); Mexico. (Coll. F. Smith.)

16. LABIDUS FONSCOLOMBII.

Labidus Fonscolombii, *Westw. Arc. Ent.* i. 76. 10.

Hab. Brazil.

17. LABIDUS HOPEI.

Labidus Hopei, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 258. 6
(1840).

Westw. Arc. Ent. i. 76. 12.

Hab. Brazil.

18. LABIDUS D'ORBIGNII.

Labidus D'Orbignii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v.
259. 7 (1840).

Hab. South America.

19. LABIDUS GRAVENHORSTII.

Labidus Gravenhorstii, *Westw. Arc. Ent.* i. 76. 13.

Hab. Brazil (Rio Vendinha).

20. LABIDUS SPINOLÆ.

Labidus Spinolæ, *Westw. Arc. Ent.* i. 77. 14.

Hab. Brazil (Meia Ponte, Caisara).

21. LABIDUS GUERINII.

Labidus Guerinii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 397.
Append. (1840).

Westw. Arc. Ent. i. 77. 15.

Hab. South America.

22. LABIDUS WALKERI.

Labidus Walkeri, *Westw. Arc. Ent.* i. 77. 17.

Hab. Brazil (Meia Ponte).

23. LABIDUS KLUGII.

Labidus Klugii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 260. 8 (1840).

Westw. Arc. Ent. i. 77. 18.

Hab. St. Vincent's.

24. LABIDUS ROMANDII.

Labidus Romandii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 261. 9 (1840).

Hab. Brazil.

25. LABIDUS ERICHSONII.

Labidus Erichsonii, *Westw. Arc. Ent.* i. 77. 19.

Hab. Brazil.

26. LABIDUS PERTII.

Labidus Latreillii, *Perty, Del. An. Art.* p. 138. t. 27. f. 11 (nec *Jurine*).

Labidus Pertii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 262. 11 (1840).

Westw. Arc. Ent. i. 78. 21.

Hab. Brazil.

Genus 4. ÆNICTUS*.

Enictus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 266 (1840).

1. ÆNICTUS AMBIGUUS.

Enictus ambiguus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 268 (1840).

Westw. Arc. Ent. i. 79. 1.

Hab. India (Poonah). (Coll. F. Smith.)

2. ÆNICTUS CERTUS. Plate I. fig. 4.

Enictus certus, *Westw. Arc. Ent.* i. 79. 2, and *Mus. Linn. Soc.*

Hab. — ? (Coll. Linn. Soc.)

* Males only of this genus are known.

3. *ÆNICTUS INCONSPICUUS*. Plate II. fig. 15a.

Ænictus inconspicuus, *Westw. Trans. Ent. Soc. Lond.* iv. 238.
pl. 14. figs. 4, 4 a-g.

Hab. South Africa. (Coll. W. W. Saunders, Esq.)

4. *ÆNICTUS PUBESCENS*.

Length $3\frac{1}{2}$ lines.—Rufo-testaceous, densely clothed with pale pubescence: the head black and shining; the mandibles and antennæ rufo-testaceous; the ocelli in a curve on the vertex, and situated on the sides of a central elevation; the mandibles long and curved. The thorax obscure ferruginous; wings hyaline and iridescent, the nervures and stigma dark brown. Abdomen densely clothed with long decumbent silky pubescence; the peduncle deeply concave above and channeled in the middle, slightly rounded at the sides, the peduncle of the same width as the second segment, the terminal segment obtuse.

Hab. Northern India. (Coll. F. Smith.)

This species closely resembles *Ænictus ambiguus*, from which it differs in being covered with dense long pale silky pubescence; the anterior margin of the prothorax is much more obtuse, and is notched in the middle; the peduncle is of a different form, for which refer to Plate II. fig. 17.

Family 6. THYNNIDÆ, *Ericks.*

Genus 1. THYNNUS.

Thynnus, *Fabr. Syst. Ent.* 360 (1775).

Myzine, pt., *Oliv. Encycl. Méth.* viii. (1811).

Tiphia, pt., *Fabr. Syst. Ent.* 354 (1775).

Myrmecodes, *Latr. Nouv. Dict. d'Hist. Nat.* xx. 2nd ed.

Mutilla, pt., *Lamarck, Hist. Nat.* iv. 2nd ed.

Thynnoides, *Guér. Voy. Coq. Zool.* ii. 232 (1830).

Agriomyia, *Guér. Voy. Coq. Zool.* ii. 218 (1830).

Lophocheilus, *Guér. Voy. Coq. Zool.* ii. (1842).

Enteles, *Westw. Arc. Ent.* ii. 143 (1843-45).

Catocheilus, *Guér. Mag. Zool.* (1842).

Erione, *Westw. Arc. Ent.* ii. 144 (1843-45).

In this Catalogue the *Thynnidæ* are divided generically on the differences of neuration in the anterior wings. After a careful examination of several extensive collections of *Thynnidæ*, that in particular of the British Museum, we find that the palpi differ in the number of joints in the males and females of the

same species; the wing-system alone, therefore, appears to form distinctive and satisfactory divisions of this remarkable family of Hymenoptera.

The immense variety of form observable in the apterous females of this genus renders it impossible to found any generic divisions upon such peculiarities. The relative proportions of the head, thorax, and abdomen vary greatly, the former being sometimes wider than the thorax, sometimes of the same width, and frequently narrower. The thorax is oblong-quadrate, narrowed anteriorly into a neck, or deeply strangled in the middle, with various intermediate gradations. The abdomen, although usually wider than the head and thorax, is sometimes of the same width.

The very great dissimilarity existing between the winged males and the apterous females renders it a matter of impossibility to unite the sexes of a species with a certainty of correctness, without a positive observation of the living insects; but much has been done in this respect by Robert Bakewell, Esq., for some years resident in Australia, whose collection has been most liberally placed at my disposal for examination, and from which many new species have been presented to the Museum Collection.

Species of Australia.

1. THYNNUS DENTATUS.

Thynnus dentatus, *Fabr. Syst. Ent.* p. 360. 1 ♂; *Ent. Syst.* ii. 244. 1; *Syst. Piez.* p. 231. 1.

Latr. Gen. Cr. et Ins. iv. pl. 3. f. 1, & tom. i. t. 13. f. 2, 3, 4 ♂; *Encycl. Méth.* p. 382. f. 8.

Guér. Voy. Coq. Zool. ii. 222.

Klug, Berl. Abhandl. (1842) 15. 1.

Don. Ins. New Holl. pl. 41. f. 1.

Ræmer, Gen. Ins. t. 35. f. 8.

Lamarck, Anim. sans Vert. t. 4. f. 109.

Hab. Australia.

The Fabrician description of this species is not sufficiently minute in structural details to distinguish the insect amongst the multitude of species now brought together:—

“*Statura et magnitudo Vespæ vulgaris. Antennæ porrectæ, fuscæ, basi piceæ. Labium flavum, dentatum. Maxillæ flavæ, apice nigræ. Thorax niger, striga antica, lobo postico scutelloque flavis. In medio dorsi lineolæ duæ impressæ, abbreviatæ. Abdomen glabrum, atrum, primo segmento basi, 2, 3, 4, punctis duobus flavis, reliquis immaculatis. Anus denticulis septem parvis serratus.*”—*Fabr. Syst. Ent.*

Male. Length $9\frac{1}{4}$ lines.—Black: the mandibles, labrum, clypeus, orbits of the eyes interrupted at their summit, and a V-shaped mark at the base of the antennæ, yellow; the scape yellow in front; the flagellum ferruginous, slightly fuscous above; the tips of the mandibles black; the anterior margin of the clypeus rounded, and a short stout tooth at its lateral angles. The anterior and posterior margins of the prothorax yellow; the scutellum and metathorax yellow, the former fuscous at its base; the wings hyaline, with their extreme base brown; the legs ferruginous, the tarsi fuscous. Abdomen: the truncation of the base and half the superior surface of the first segment yellow; two large ovate spots on the second segment, two smaller ones on the third, and two minute oblique ones on the fourth segment, yellow; the sixth segment with a tooth at its lateral basal margins; the seventh deeply emarginate above, the lower ventral plate terminating in an acute spine, which has a short tooth on each side at its base, and another longer tooth on the lateral margins.

This species is apparently unique in the Banksian Collection.

2. *THYNNUS VARIABILIS*. Plate III. fig. 1 ♂. B.M.

Myzine aptera, *Oliv. Encycl. Méth.* viii. 137. 7 ♀.

Thynnus variabilis, *Kirby, Trans. Linn. Soc.* xii. 476 ♂ ♀.

Guér. Voy. Coq. Zool. ii. 223; *Mag. Zool.* (1842) pl. 101. fig. 1–20.

Klug, Berl. Abhandl. (1842) 16. 4. f. 1 ♂, 2 ♀.

Thynnus apterus, *Guér. Voy. Coq. Zool.* ii. 230 ♀.

Thynnus flavo-guttatus, *Guér. Voy. Coq. Zool.* ii. 230 ♀.

Myrmecodes flavo-guttatus, *Latr. Nouv. Dict. d'Hist. Nat.* 2nd ed. xxii. p. 143 ♀.

Thynnus Olivieri, *Ericks. Wiegmann Arch.* (1842) p. 262. 235 ♂ ♀.

Westw. Arc. Ent. ii. 146.

Hab. Australia; Tasmania.

3. *THYNNUS ZONATUS*.

Thynnus zonatus, *Guér. Voy. Coq. Zool.* ii. 222.

Klug, Berl. Abhandl. (1842) 15. 2.

Hab. Australia.

4. *THYNNUS AFFINIS*.

B.M.

Thynnus affinis, *Guér. Voy. Coq. Zool.* ii. 226 ♂.

Klug, Berl. Abhandl. (1842) 18. 7.

Hab. Australia (King George's Sound).

5. THYNNUS CONFUSUS.

B.M.

Male. Length $8\frac{1}{2}$ lines.—Closely allied to *T. variabilis*, but apparently a very distinct species. Black: the orbits of the eyes, interrupted at their summit, the mandibles, clypeus, and scape of the antennæ in front, yellow. Thorax: the anterior and posterior margins of the prothorax, the tegulæ, a spot beneath the wings, an escutcheon-shaped spot on the scutellum and post-scutellum, yellow; the wings fulvo-hyaline; the legs fulvous, with the coxæ spotted with black and pale yellow. Abdomen cylindrical, truncated at the base; the first segment with a large transverse macula on each side, the following segments with a double row of ovate spots on each side; beneath, the basal segment pinched in the middle into a sharp central yellow carina, the second segment almost entirely yellow; the following segments with a large transverse macula on each side, each macula with a crescent-shaped black mark behind; the apical ventral plate terminating in a narrow style, which has a sharp spine at the apex.

Hab. Australia.

This species has a resemblance both to *T. variabilis* and *T. affinis*; the form of the abdomen, however, is like that of *T. Shuckardi*, being cylindrical and regularly tapering to its apex; but the narrow terminal style at once separates it from both the allied species.

6. THYNNUS OBSCURIPENNIS.

Thynnus obscuripennis, Guér. *Voy. Coq. Zool.* ii. 227 ♂.

Klug, Berl. Abhandl. (1842) 18. 8.

Hab. Australia.

7. THYNNUS RUFIVENTRIS.

B.M.

Thynnus rufiventris, Guér. *Voy. Coq. Zool.* 227 ♂.

Klug, Berl. Abhandl. (1842) 19. 9.

Female. Length 7–9 lines.—Yellow above, the mandibles ferruginous; the thorax at the sides and beneath dark fusco-ferruginous, sometimes black; the prothorax above, the posterior margin of the mesothorax, the margins of the scutellum and the metathorax behind, blackish; the legs ferruginous, with the coxæ black. The abdomen dark rufo-piceous beneath; the margins of the segments above, and a central line on the third, fourth, and fifth, black or rufo-piceous; the second segment with a

transverse, slightly curved, delicate striation; the apical segment with a longitudinal striation.

Hab. Australia (Port Jackson).

8. THYNNUS ANNULATUS.

Thynnus annulatus, Kirby, *Trans. Linn. Soc.* xii. 476. 29 ♂.

Guér. Voy. Coq. Zool. ii. 228.

Klug, Berl. Abhandl. (1842) 17. 5.

Thynnus australis, *Boisd. Voy. de l'Astr. Zool.* 655. pl. 12. f. 2.

Guér. Voy. Coq. Zool. ii. 228.

Hab. Australia (Port Jackson).

9. THYNNUS AUSTRALIS.

B.M.

Myrmecodes Australis, Gray, *Cuv. Anim. Kingd.* (Griff.) (nec *Boisd.*) xv. 516. pl. 71. f. 3 ♀.

Thynnus Grayii, *Guér. Voy. Coq. Zool.* ii. 231.

Thynnus Australis, *Klug, Berl. Abhandl.* (1842) 18. 6.

Thynnus Brownii, *Westw. Arc. Ent.* ii. 113. pl. 76. f. 1 ♂.

Hab. Australia (King George's Sound).

10. THYNNUS WALLISII.

B.M.

Male. Length 12–13 lines.—The head, antennæ, thorax, femora, and base of the abdomen black; the mandibles, clypeus, the anterior margins of the face and lower orbits of the eyes yellow; tips of the mandibles rufo-piceous; the posterior margin of the prothorax and the tegulæ yellow; the tibiæ and tarsi reddish yellow or pale ferruginous. The head and thorax densely covered with griseous pubescence, that on the disk of the latter yellowish; the legs have a short thick griseous pubescence; the wings flavo-hyaline, the nervures fusco-ferruginous. Abdomen reddish yellow, each segment with a faint ferruginous transverse line, which is straight in the middle, then curves abruptly downwards, the line being widened at the lower part of the curve; the curved line then runs upwards as high as the transverse line, and from thence curves off to the outer margins; above the outer curve there is an indistinct ferruginous dot; the apical segment is punctured at the base, and has curved striæ at the apex; the lower ventral plate is triangular, the lateral angles subdentate, the apical one with a blunt spine.

Female. Length 10 lines.—Head ferruginous, with a transverse yellow stripe on the front, between the eyes; the thorax and coxæ black; femora, tibiæ, and tarsi ferruginous, the two latter densely spinose. Abdomen yellow above, black at the base and beneath; each segment with a similar curved line as in the

male, but much darker; the line takes a semicircular curve in the centre, then a downward, and again an upward curve to the lateral margin; the second segment transversely striated, the apical one longitudinally so.

Hab. Australia (Sydney).

11. THYNNUS INSIGNIS.

B.M.

Male. Length 15 lines.—Head and thorax black; abdomen reddish yellow; the legs ferruginous; the antennæ black, the scape ferruginous at the base and apex; the clypeus, labrum, mandibles, and orbits of the eyes yellow; the yellow line interrupted at the top of the eyes; the tip of the mandibles black. The thorax densely clothed with short silky white pubescence, that on the metathorax longest; the posterior margin of the prothorax and the tegulæ yellow; the wings slightly coloured. Abdomen truncate at the base, and gradually tapering from thence to the apex; the extreme base black; each segment with a round ferruginous spot on each side, united by an arched line of the same colour, which curves forwards to the basal margin of each segment; the apical margins of the segments semitransparent, and having a beautiful radiating series of dark hair-like lines springing from the basal margin of each segment; the apical segment with a semicircular space at its base striated longitudinally, beyond this the striation is transverse.

Hab. West Australia (Perth).

12. THYNNUS SIMILLIMUS.

B.M.

Male. Length 15 lines.—This species is coloured like *T. Wallisii*, with the following differences: the tegulæ, prothorax, and legs entirely black, but pubescent as in *T. Wallisii*; the clypeus widely emarginate, the abdomen subtruncate at the base; the segments have a similar transverse upwards and downwards curved ferruginous line, but the segments are pale beneath the line; the apical segment has a semicircular margined space at its base, which is longitudinally striated; the segment has a curved striation beyond; the margin of the lower ventral plate is curved and entire.

Hab. Australia (Sydney).

13. THYNNUS VESTITUS.

B.M.

Male. Length $7\frac{1}{2}$ lines.—Black: the head and thorax densely clothed with a white downy pubescence. The mandibles, clypeus, a line on the inner orbits of the eyes as high as the insertion of the antennæ, a narrow line behind them, and two oblique

spots between the antennæ, yellow. Thorax: wings hyaline, faintly yellow, with the nervures fusco-ferruginous; the tegulæ pale testaceous yellow; the anterior coxæ yellow in front. Abdomen: each segment has a broad interrupted yellow fascia, which is crossed longitudinally by a waved fuscous line at the lateral margins; beneath, the second and three following segments with a large yellow spot on each side; covered above and beneath with fine shallow punctures.

Hab. Australia (Swan River).

14. *THYNNUS FLAVIVENTRIS*.

Thynnus flaviventris, *Guér. Voy. Coq. Zool.* ii. 229 ♂; *Mag. Zool.* (1842) pl. 101. f. 21 ♂.

Klug, Berl. Abhandl. 19. 10.

Hab. Australia.

15. *THYNNUS EMARGINATUS*.

Thynnus emarginatus, *Fabr. Syst. Ent.* 360. 2 ♀; *Ent. Syst.* ii. 244. 2; *Syst. Piez.* 231. 2.

Guér. Voy. Coq. Zool. ii. 229.

Hab. Australia.

16. *THYNNUS PEDESTRIS*.

Tiphia pedestris, *Fabr. Syst. Ent.* 354. 8 ♀; *Ent. Syst.* ii. 228. 19; *Syst. Piez.* 235. 23.

Thynnus pedestris, *Guér. Voy. Coq. Zool.* ii. 16. 3.

Klug, Berl. Abhandl. (1842) 16. 3.

Mutilla Myrmecodes, *Lamarck, Hist. Nat.* 2nd ed. iv. 316. 7.

Hab. Australia.

17. *THYNNUS HYALINATUS*.

B.M.

Thynnus hyalinatus, *Westw. Arc. Ent.* ii. 106. pl. 74. fig. 3 ♂, fig. 4 ♀.

Hab. Tasmania.

18. *THYNNUS MACULOSUS*.

B.M.

Male. Length 11 lines.—Black: the clypeus, the margins of the face on each side, the lower part of the orbits of the eyes, and two spots between the antennæ, yellow; an ovate black spot in the middle of the clypeus; the head and thorax above with pale fulvous pubescence, on the sides and beneath it is cinereous. The metathorax with a transverse yellow spot at its base; the wings fulvo-hyaline, the nervures dark ferruginous; the legs ferruginous, with the coxæ black, the posterior pair with a

minute yellow spot at the sides. Abdomen : a subovate yellow spot on each side of the first five segments placed in the middle, a larger spot on each segment at the extreme lateral margins ; beneath, a transverse spot on the basal segment, a large yellow macula on each side of the four following segments, and a minute one on the fifth.

Hab. Australia.

This species is closely allied to *T. variabilis* and *hyalinatus*.

19. THYNNUS PICIPES.

Thynnus picipes, *Westw. Arc. Ent.* ii. 114. pl. 77. f. 2 ♂.

Thynnus flavilabris, *Guér. Mag. de Zool.* (1842) p. 8?

Hab. Australia (King George's Sound).

20. THYNNUS LEACHIELLUS.

B.M.

Thynnus interruptus, *Westw. Arc. Ent.* ii. 115 (nec *Klug*), pl. 77. f. 1 ♂.

Thynnus Leachiellus, *Westw. Arc. Ent.* ii. 135. pl. 83. f. 4 ♀.

Hab. Australia.

21. THYNNUS TUBERCULIVENTRIS.

B.M.

Thynnus tuberculiventris, *Westw. Arc. Ent.* 118. pl. 76. f. 2 ♂.

Hab. Australia (King George's Sound).

22. THYNNUS DIMIDIATUS.

Thynnus dimidiatus, *Westw. Arc. Ent.* ii. 121. pl. 76. f. 5 ♂.

Hab. Australia.

23. THYNNUS SHUCKARDI.

B.M.

Thynnus Shuckardi, *Guér. Mag. Zool.* (1842) pl. 100. f. 13 ♂.

Westw. Arc. Ent. ii. 136. pl. 83. f. 5 ♀.

Hab. Australia.

24. THYNNUS GUERINII.

B.M.

Thynnus Guerinii, *Westw. Arc. Ent.* ii. 137.

Hab. Australia.

25. THYNNUS KLUGII.

B.M.

Thynnus Klugii, *Westw. Arc. Ent.* ii. 140. pl. 82. f. 1 ♂.

Hab. Australia (Swan River).

36. *THYNNUS FLAVILABRIS*.

B.M.

Thynnus flavilabris, Guér. *Mag. Zool.* (1842) *Mon. Thynn.* p. 8.
Thynnus morio, MacLeay, MS.?

Hab. Australia.

37. *THYNNUS FENESTRATUS*.

B.M.

Male. Length 12 lines.—Black: the abdomen shining, with a nigro-succous tinge; the palpi, labrum, clypeus and mandibles orange-red, the tips of the latter black; the orange colour runs from the clypeus on each side along the anterior margin of the face to the base of the mandibles; the head and thorax with a dense griseous pubescence, which is obliterated on the disk of the latter, but thick and woolly on the metathorax; wings dark brown with a violet reflexion, their base hyaline. The abdomen with scattered punctures, and an impressed transverse line near the basal margin of the first, second, and third segments; the apical segment longitudinally rugose, the inferior ventral plate terminating in a barbed spine.

Hab. Australia (Swan River).

38. *THYNNUS GRAVIDUS*.

Thynnus gravidus, Westw. *Arc. Ent.* ii. 141.

Thynnus Klugii, Westw. ?

Hab. Australia.

39. *THYNNUS PURPUREIPENNIS*.

Thynnus purpureipennis, Westw. *Arc. Ent.* ii. 143. pl. 83. f. 1 ♂.

Hab. Australia.

40. *THYNNUS DECIPIENS*.

Thynnus decipiens, Westw. *Arc. Ent.* ii. 105 (note). 124 ♂.

Hab. Tasmania.

41. *THYNNUS OLIVIERI*.

Thynnus Olivieri, Ericks. *Wiegman. Arch.* (1842) p. 263. 235 ♂.

Wiegman. Arc. Ent. ii. 146.

Hab. Tasmania.

42. *THYNNUS FERVIDUS*.

Thynnus fervidus, Ericks. *Wiegman. Arch.* (1842) 262. 236 ♂.

Wiegman. Arc. Ent. ii. 146.

Hab. Tasmania.

33. THYNNUS HUMILIS.

Thynnus humilis, *Erichs. Wieg. Arch.* (1842) 264. 238 ♀.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

34. THYNNUS MODESTUS.

B.M.

Male. Length 8 lines.—Shining black: closely and rather finely punctured; the mandibles, clypeus, orbits of the eyes interrupted at their summit, and a V-shaped mark between the antennæ, yellow. Thorax: the anterior and posterior margin of the prothorax reddish-yellow; the tibiæ, tarsi, and knees pale ferruginous; wings fulvo-hyaline, the nervures fusco-ferruginous. Abdomen: each segment with a large ovate honey-coloured macula on each side; beneath, the second and three following segments with a smaller subangular spot on each side.

Hab. Australia (Swan River).

35. THYNNUS CONSTRICTUS.

B.M.

Male. Length $9\frac{1}{2}$ lines.—Black and shining: the mandibles, clypeus, orbits of the eyes interrupted at their vertex, and a V-shaped mark between the antennæ, yellow. Thorax: a broad fascia on the posterior margin of the prothorax, the tegulæ, a square spot on the mesothorax touching the scutellum, the latter with a spot behind, the post-scutellum, and two oblique lines on the metathorax, yellow; wings fulvo-hyaline, the nervures fusco-ferruginous; the femora ferruginous, the tibiæ and tarsi yellow; the femora fuscous in front. Abdomen: the margins of the segments constricted; an oblong yellow macula at the lateral margins of each segment, each macula notched in front; at the apical margin of each segment are a number of large punctures; beneath coarsely punctured, and with a minute yellow spot on each side of the second, third, and fourth segments.

Hab. Western Australia (Swan River).

36. THYNNUS SENEX.

B.M.

Male. Length 9 lines.—Black: the head, thorax, and legs thickly covered with cinereous pubescence, slightly fulvous on the vertex and disk of the thorax; the mandibles, clypeus, and lower orbits of the eyes yellow; the clypeus with a transverse line above and two oblique lines beneath, ferruginous. Thorax: the hinder margin of the prothorax obscurely ferruginous; the wings hyaline, the nervures and tegulæ ferruginous; the legs ferruginous, with the coxæ and trochanters black. Abdomen:

each segment with a large ovate spot on each side, beneath spotted as above; the apical ventral plate angular at the apex, which terminates in a curved spine.

Hab. Western Australia.

37. *THYNNUS ASSIMILIS*.

B.M.

Male. Length 8-9 lines.—Closely allied to *T. melleus*; but the clypeus is not so much produced, and the process at the apex of the terminal ventral plate is truncate; in *T. melleus* it has an acute spine at the apex; the apical segment above is punctured in the latter insect, in the present it is longitudinally striated. The clypeus, mandibles, orbits of the eyes, hinder margin of the vertex, and two spots at the insertion of the antennæ, yellow; the yellow line round the orbits of the eyes interrupted at their summit. Thorax black; a line at the anterior and posterior margins of the prothorax, two longitudinal lines on the disk of the mesothorax, one over each tegula, two spots on the scutellum and one at each of its basal angles, the post-scutellum and an oblique spot on each side, two oblique lines on the metathorax and a small square one at its apex in the centre, yellow; the tegulæ and some irregularly-placed spots beneath the wings yellow; wings hyaline, the nervures ferruginous. Abdomen yellow, with a line down the centre, which is black at the base, becoming ferruginous towards the apex, and similar transverse lines at the basal and apical margins of all the segments; the legs ferruginous.

Var. 1. The abdomen ferruginous, with black lines as above.

Hab. Australia (Swan River).

38. *THYNNUS AGILIS*.

B.M.

Male. Length 11 lines.—Head and thorax black, abdomen reddish-yellow; the clypeus, a line at the inner and outer margins of the eyes interrupted at their summit, and two oblique spots between the antennæ and the mandibles, yellow. Thorax: the posterior margin of the prothorax, a spot on the scutellum, the post-scutellum, the tegulæ, and legs, yellow; the legs with a ferruginous tinge on the femora and tibiæ beneath; wings hyaline, with a faint yellow tinge, the nervures fusco-ferruginous; the metathorax swollen at the sides, rounded behind, and covered with hoary pubescence, the other parts of the thorax as well as the head with a short thin hoary pubescence. The base of the abdomen and the basal and apical margins of all the segments blackish-brown; each segment has on each side a large ovate macula nearly the width of the segment, and nearly meet-

ing in the centre; the apical segment with oblong punctures; the ventral plate terminating in an acute spine.

Hab. Australia (Swan River).

39. *THYNNUS FLAVIPENNIS*.

B.M.

Male. Length 9 lines.—Black: a line along the outer orbits of the eyes which is continued along the margin of the vertex, the mandibles, clypeus, a broad line up the inner orbits of the eyes as high as the antennæ, and the scape in front, reddish-yellow. Thorax: the prothorax, a transverse spot on the mesothorax behind, a line over the tegulæ terminating in a spot, the scutellum, post-scutellum, and a reversed barb-shaped spot on the metathorax, yellow; there is also a yellow line at the sides of the latter, and the tegulæ are yellow; the wings flavo-hyaline, the nervures ferruginous; the legs pale ferruginous, with the anterior coxæ yellow in front. Abdomen reddish-yellow, each segment with a very large yellow spot on each side, the hinder margin of each defined by a ferruginous stripe; the apical segment with a curved striation; the ventral plate triangular, with the apical angle obtuse.

Hab. Australia.

Resembles *T. melleus*: some examples of this species have a large black or fuscous spot at the sides of the prothorax.

40. *THYNNUS FLAVOPICTUS*.

B.M.

Male. Length 11 lines.—Black: the mandibles, clypeus, orbits of the eyes interrupted at their summit, the head behind, and two oblique lines between the antennæ, yellow. Thorax: the anterior and posterior margins of the prothorax, two oblique stripes on the disk of the mesothorax uniting at the base of the scutellum, the tegulæ and a line over them, a transverse spot on the scutellum, two ovate spots on each side, the post-scutellum uniting with a spot on each side, and the metathorax, yellow; the latter has a black angular spot in the middle of the base and a larger one at the lateral basal angles; the legs ferruginous, with the coxæ and femora yellow beneath; wings hyaline, their nervures fusco-ferruginous. Abdomen: each segment with a broad interrupted yellow fascia in the middle; the apical segment yellow, except at its base, and longitudinally striated; the ventral plate terminating in a sharp curved spine, which has a smaller one on each side at its base; beneath, the basal segment with a trilobate spot, the four following segments with a very

broad yellow fascia which is deeply emarginate in the centre, the sixth with a spot on each side.

Hab. Australia.

41. THYNNUS (THYNNOIDES) GRACILIS. B.M.

Thynnus (*Thynnoides*) *gracilis*, *Westw. Arc. Ent.* ii. 139. pl. 83. f. 2 ♂, 3 ♀.

Hab. Australia (Adelaide; River Murray).

42. THYNNUS (THYNNOIDES) NIGRIPES. B.M.

Thynnoides nigripes, *Guér. Mag. Zool.* (1842) p. 10.

Hab. Australia (Swan River).

43. THYNNUS (THYNNOIDES) FULVIPES. B.M.

Thynnoides fulvipes, *Guér. Voy. Coq. Zool.* ii. 233.

Thynnus fulvipes, *Klug, Berl. Abhandl.* (1842) 22. 15 ♂.

Hab. Australia (Port Jackson).

44. THYNNUS (THYNNOIDES) RUBRIPES. B.M.

Thynnoides rubripes, *Guér. Voy. Coq. Zool.* ii. 233 ♂; *Atlas, Ins.* pl. 8. f. 9.

Thynnus rubripes, *Klug, Berl. Abhandl.* (1842) 22. 16.

Hab. Australia (Port Jackson).

45. THYNNUS (THYNNOIDES) LABIATUS.

Thynnus labiatus, *Klug, Berl. Abhandl.* (1842) 23. 17 ♂.

Hab. Australia.

46. THYNNUS (THYNNOIDES) PUGIONATUS.

Thynnoides pugionatus, *Guér. Voy. Coq. Zool.* ii. 234 ♂.

Thynnus pugionatus, *Klug, Berl. Abhandl.* (1842) 23. 19.

Hab. Australia.

47. THYNNUS (THYNNOIDES) FUMIPENNIS. B.M.

Thynnus (*Thynnoides*) *fumipennis*, *Westw. Arc. Ent.* ii. 108. pl. 75. f. 1 ♂, f. 2 ♀.

Hab. Australia (Port Philip).

48. THYNNUS (THYNNOIDES) OBSCURUS. B.M.

Thynnus obscurus, *Klug, Berl. Abhandl.* (1842) 22. 14. f. 4 ♂.
Thynnus (*Thynnoides*) *obscurus*, *Westw. Arc. Ent.* ii. 139. pl. 82.
 f. 2 ♀.

Hab. Australia.

49. THYNNUS TROCHANTERINUS. B.M.

Thynnus trochanterinus, *Westw. Arc. Ent.* ii. 116. pl. 77. f. 3 ♂.

Hab. Australia (King George's Sound).

50. THYNNUS (THYNNOIDES) BASALIS.

Male. Length $7\frac{1}{2}$ lines.—Head, thorax, legs, and basal segment of the abdomen black, the rest of the segments of the latter red; the mandibles, clypeus, and orbits of the eyes yellow, the orbits black at their summit. The head and thorax covered with pale pubescence, and the legs with short pale downy pile; the anterior tibiæ in front and the apical joints of the tarsi ferruginous; the wings slightly coloured, with the nervures dark brown. Abdomen rather strongly punctured, the margins of the segments slightly constricted, and each with a transverse impressed line at its base; beneath regularly punctured, the margins of the segments fringed with pale hairs.

Hab. Australia (Swan River).

51. THYNNUS (THYNNOIDES) CARBONARIUS. B.M.

Male. Length 8 lines.—Black: head and thorax very closely punctured and subopaque; abdomen as long as the head and thorax, punctured, closely so at the base of the segments, and much more distantly so towards their apical margins; the apical segment with a central produced subtriangular process at its base, longitudinally striated, beneath which it is transversely striated; beneath finely and very closely punctured; the sixth segment with a small tooth on each side of its apical margin; the seventh segment terminating in a lanceolate spine, which has a small tooth on each side of its base; the spine is transversely striated above at its base and flattened.

Hab. Australia (Adelaide).

52. THYNNUS (AGRIOMYIA) DEPRESSUS. B.M.

Thynnus (*Agriomyia*) *depressus*, *Westw. Arc. Ent.* ii. 107. pl. 74.
 f. 5 ♂, f. 6 ♀.

Hab. Australia (King George's Sound).

53. THYNNUS (AGRIOMYIA) ODYNEROIDES. B.M.

Thynnus (Agriomyia) odyneroides, *Westw. Arc. Ent.* ii. 109. pl. 75.
f. 3 ♂, f. 4 ♀.

Hab. Australia.

54. THYNNUS (AGRIOMYIA) MELLEUS. B.M.

Thynnus (Agriomyia ?) melleus, *Westw. Arc. Ent.* ii. 118. pl. 76.
f. 4 ♂.

Hab. Australia (King George's Sound; Melbourne).

55. THYNNUS (AGRIOMYIA) TRIFIDUS. B.M.

Thynnus (Agriomyia) trifidus, *Westw. Arc. Ent.* ii. 119. pl. 77.
f. 4 ♂.

Hab. Australia (King George's Sound).

56. THYNNUS (AGRIOMYIA) MARGINALIS. B.M.

Thynnus (Agriomyia) marginalis, *Westw. Arc. Ent.* ii. 120. pl. 76.
f. 3 ♂.

Hab. Australia (King George's Sound).

57. THYNNUS (AGRIOMYIA) MARGINILABRIS.

Agriomyia marginilabris, *Guér. Mag. Zool.* (1842) *Mon. Thynn.*
p. 3. pl. 100 ♂.

Hab. Australia.

58. THYNNUS (AGRIOMYIA) CONSANGUINEUS.

Agriomyia affinis, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 4.

Hab. Australia.

59. THYNNUS (AGRIOMYIA) WESTWOODII.

Agriomyia Westwoodii, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 4.

Hab. Tasmania.

60. THYNNUS (AGRIOMYIA) MACULATUS. B.M.

Agriomyia maculata, *Guér. Voy. Coq. Zool.* ii. 218.

Thynnus maculatus, *Klug, Berl. Abhandl.* (1842) 20. 12.

Hab. Australia.

61. THYNNUS (AGRIOMYIA) VARIEGATUS.

Thynnus variegatus, *Klug, Berl. Abhandl.* (1842) 20. 12.

Hab. Australia.

62. THYNNUS (AGRIOMYIA) PULCHELLUS. B.M.

Thynnus pulchellus, *Klug, Berl. Abhandl.* (1842) 20. 13 ♂.

Hab. Australia.

63. THYNNUS (AGRIOMYIA) SENILIS. B.M.

Thynnus senilis, *Erichs. Wieg. Archiv* (1842) 263. 236 ♂.

Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

64. THYNNUS (AGRIOMYIA) JUCUNDUS. B.M.

Male. Length 5 lines.—Black: the mandibles, clypeus, orbits of the eyes interrupted at their summit, a narrow line on the vertex, a spot between the stemmata, and an angular shape above the antennæ, bright yellow; the line on the inner orbits emarginate. The margins of the prothorax, an elongate-quadrate-shaped spot on the mesothorax having the anterior angles produced, the tegulæ and a line over them uniting with a spot behind, a spot on the scutellum, the post-scutellum, an elongate angular shape on the metathorax, its sides, and two spots beneath the wings, yellow; the legs red, and spotted with yellow; the wings hyaline and iridescent, with the nervures ferruginous. Abdomen: an interrupted broad yellow fascia on each segment, which is slightly notched anteriorly towards the lateral margins; beneath, the segments with broad interrupted fasciæ.

Hab. Australia.

65. THYNNUS (AGRIOMYIA) RUBELLUS. B.M.

Male. Length $6\frac{1}{2}$ lines.—Black: the mandibles, anterior margins of the face, the clypeus, and the lower portion of the orbits of the eyes reddish-yellow. Thorax: a narrow line on the anterior margin of the prothorax, the tegulæ, and the post-scutellum yellow; the thorax beneath and the metathorax with cinereous pubescence; wings subhyaline, the nervures ferruginous; the legs ferruginous, with the coxæ black. Abdomen: the second, third, and fourth segments red, with a transverse whitish fascia near their apical margins; these fasciæ have a central minute black dot, and on each side a short black line; the fifth segment has at its apical margin a curved pale line on each side, terminating in a round dot within; beneath, the segments have a central and a lateral pale spot; the basal segment with a conical tubercle, which is pale at the tip.

Hab. Australia.

66. THYNNUS (AGRIOMYIA) INCONSTANS.

B.M.

Male. Length $8\frac{1}{2}$ lines.—Black: head and thorax covered with cinereous downy pubescence, that on the vertex and disk of the thorax slightly fulvous; the clypeus and mandibles yellow, usually with ferruginous stains. Thorax: a minute yellow dot on the scutellum and post-scutellum; the legs ferruginous; the coxæ, trochanters, and femora above, fuscous or black; wings hyaline, the nervures black, becoming ferruginous at the base of the wings. Abdomen ferruginous, the basal and apical margins of the segments black or fuscous; a black, fuscous, or ferruginous line down the centre, forming, as it were, large ovate ferruginous spots on the segments on each side; some examples have the abdomen ferruginous, with large undefined spots on each side; sometimes the spots are yellowish, or the abdomen is dark fusc-ferruginous and the spots yellowish.

Hab. Australia.

67. THYNNUS (AGRIOMYIA) ALBO-PICTUS.

B.M.

Male. Length 7 lines.—Black: the clypeus, mandibles, orbits of the eyes broadly, and a line tracing a bell-shaped form before the anterior stemma, white; the orbits of the eyes interrupted at their summit. The margins of the prothorax, a square spot on the mesothorax, the tegulæ, a broad stripe on the scutellum and a spot before its basal angles, the post-scutellum uniting with a spot beyond it, and the metathorax, except its extreme base, white; two large irregular-shaped spots beneath the wings; the coxæ and femora beneath white; the coxæ spotted with black; the anterior and intermediate tibiæ and tarsi ferruginous; wings hyaline, with blackish nervures. Abdomen: each segment with a very broad white fascia, the basal one narrowly interrupted, the following with a narrow central black line near their posterior margin and a minute notch anteriorly towards the lateral margins; beneath, white, with narrow black margins to the segments, the basal one produced into a conical tooth.

Hab. Australia (Swan River).

68. THYNNUS (AGRIOMYIA) LUCTUOSUS.

B.M.

Male. Length 7–8 lines.—Jet-black: the abdomen shining; the head and thorax covered with confluent punctures and sub-opake; the sides and beneath with thin long cinereous pubescence; the anterior margin of the face and clypeus, a minute spot in the middle of the latter, a spot at the base of the mandibles, and a short narrow line on the lower part of the outer

orbits of the eyes, white; a minute white spot in the middle of the posterior margin of the vertex. Thorax: a narrow line on the anterior margin of the prothorax, a spot on the tegulae, a triangular minute one on the mesothorax touching the scutellum, and the post-scutellum, white; wings subhyaline, faintly clouded towards their apex. Abdomen: an irregular-shaped white line in the middle of the second and two following segments, interrupted in the middle; the lines on the second segment emarginate beneath, those on the two following segments interrupted; the fifth segment with two minute dots; beneath, the basal segment produced into a white conical tooth in the middle of its apical margin, the three following segments with a transverse emarginate stripe in the middle and a minute dot at the extreme lateral margins; the fifth segment with two minute dots, or im-maculate.

Hab. South Australia.

The white markings on the abdomen vary in different individuals in being more or less obliterated; and examples are not uncommon with the legs red, as observed by Mr. Bakewell, who captured several pairs of the sexes.

69. THYNNUS (AGRIOMYIA) ALBO-MACULATUS. B.M.

Male. Length $7\frac{1}{2}$ lines.—Black: head and thorax closely and strongly punctured and subopaque; abdomen shining black. The clypeus and a line on each side, terminating at the margin of the eyes, and a spot at the base of the mandibles, yellow; the prothorax yellow, with a central and a lateral black dot; a square spot on the mesothorax, a spot on the scutellum and two on each side of it, the post-scutellum, an irregular stripe beneath the wings, the tegulae, and two oblique spots on the metathorax, yellowish-white. Abdomen shining: the first segment with a minute white spot on each side; the second, third, and fourth segments with an oblong transverse subquadrate spot on each side; the fifth segment with a narrow line on each side; each segment has a transverse impressed line a little before its apical margin; beneath, the second and two following segments with transverse white spots on each side and an impressed line before their apical margins; the basal segment produced into a conical tooth in the middle of its posterior margin.

Hab. Australia (Adelaide).

Probably in some examples the markings on the thorax would be white; in the specimen described they appear dis-coloured.

70. THYNNUS (AGRIOMYIA) VIGILANS.

B.M.

Male. Length 8 lines.—Black, and thinly covered with cinereous pubescence, which is most dense on the body beneath and on the metathorax; the mandibles, margins of the face on each side of the clypeus, a narrow line on the lower portion of the orbits of the eyes, and a narrow stripe on each side of the hinder margin of the vertex, yellow. Thorax: a minute yellow spot on the scutellum and post-scutellum; wings hyaline, the nervures fusco-ferruginous. Abdomen finely punctured; the margins of the segments slightly constricted; a subovate yellow spot on each side of the four basal segments.

Hab. Australia.

71. THYNNUS COGNATUS.

B.M.

Male. Length 6 lines.—Black: the head, thorax, and abdomen beneath covered with long griseous pubescence; the abdomen has a thin short cinereous pubescence above. Head and thorax covered with confluent punctures; the anterior margins of the face and clypeus and the mandibles yellow; the tarsi and articulations of the legs ferruginous, the tarsi slightly fuscous above; wings fulvo-hyaline, the nervures fusco-ferruginous. Abdomen subpetiolate, smooth, and shining; the four basal segments with an ovate orange spot on each side.

Hab. Australia.

This species is similarly coloured to *T. vigilans*, but differs in having the anterior margin of the clypeus yellow, the tarsi of a different colour, and in having the abdomen subpetiolate, shining, and not punctured.

72. THYNNUS XANTHORRHÆI (MS. MacLeay).

B.M.

Male. Length 6 lines.—Black: the mandibles, labrum, inner and outer orbits of the eyes interrupted at their summit, a minute spot on the hinder margin of the vertex, and an elongate one between the antennæ which is divided by a narrow black line, yellow. Thorax: the margins of the prothorax, three large irregular-shaped spots beneath the wings, two pointed stripes on the mesothorax, an angular spot on the scutellum and a spot on each side, the post-scutellum with a spot on each side, and the metathorax, yellow; a central longitudinal black line and a large black spot on each side of the metathorax; the legs ferruginous, with the coxæ yellow; the trochanters black, and the apical joints of the tarsi fuscous; wings hyaline, the nervures fusco-ferruginous. Abdomen: all the segments, excepting the apical one, with a transverse yellow fascia in the middle more

or less interrupted, the fascia beneath produced laterally into a hook-shaped form and slightly notched above; beneath, the apical half of the basal segment yellow, with an oblique black line on each side; the second segment yellow, with a black stripe on each side, and two or three of the following segments with a yellow spot on each side.

Hab. Australia (Sydney, Moreton Bay, &c.).

73. THYNNUS CABINATUS.

B.M.

Male. Length $5\frac{1}{2}$ –6 lines.—Black: the clypeus, anterior margins of the face, inner margins of the eyes broadly, not extending to their summit, a line behind the eyes, two spots on the hinder margin of the vertex, and a V-shaped mark between the antennæ, yellow; the clypeus with a central longitudinal black carina, not extending to the apex. The margins of the prothorax, an oblique stripe and two spots beneath the wings, the tegulæ, a minute spot on the mesothorax, with a similar one on the scutellum and another on each side of its base, the post-scutellum, and an oblique stripe on each side of the metathorax, yellowish-white; wings hyaline, the nervures ferruginous; legs ferruginous, with the intermediate and posterior tibiæ and tarsi fuscous above; the coxæ black, spotted with yellow. Abdomen shining; each segment, the two apical ones excepted, with a curved white or yellowish-white line on each side, which terminates at each end in a rounded spot; beneath, the second, third, and fourth segments with a similar curved line on each side, but not having terminal spots.

Hab. Australia (N.W. Coast).

74. THYNNUS OPTIMUS.

B.M.

Male. Length $5\frac{1}{2}$ lines.—Head, thorax, and abdomen black above and ferruginous beneath; the mandibles, clypeus, orbits of the eyes, and a bell-shaped spot above the antennæ, yellow. Thorax: the margins of the prothorax (the anterior one interrupted), an oblong spot on the disk of the mesothorax, the tegulæ and a line over each, a spot on the scutellum, the post-scutellum, a longitudinal line on the metathorax, its sides, a spot on the coxæ, a transverse one on the breast, and several large ones beneath the wings, yellow; wings hyaline, the nervures ferruginous. Abdomen: a large yellow spot on each side of the segments, a line between the spots ferruginous; beneath, a yellow spot on each side of the second, third, and fourth segments.

Hab. Australia (Swan River).

75. THYNNUS INTRICATUS.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: the head finely rugose; a narrow line at the lower orbits of the eyes, the clypeus and anterior margins of the face, two spots between the antennæ, and a spot at the base of the mandibles, white; an oblique reddish-yellow spot on each side of the vertex touching the eyes; an anchor-shaped black spot on the clypeus. Thorax finely punctured; the metathorax finely rugose, except its extreme base, which is smooth and shining; a line on the anterior and posterior margins of the prothorax, the former slightly interrupted, a spot on the tegulæ, a longitudinal stripe on the mesothorax, a spot on the scutellum, a spot on the posterior lateral margin of the metathorax, and three spots on each side of the thorax beneath the wings, white; the wings hyaline, their nervures black. Abdomen smooth and shining; the basal segment with a minute white spot on each side, the four following segments with a large oblique spot at their lateral margins and two small ones in the centre, these spots united to each other on each side by a narrow curved line; beneath, the second, third, and fourth segments with an ovate white spot at their extreme lateral margins; the terminal segment produced into an obtuse appendage which has a minute tooth in the middle of its apical margin.

Hab. Tasmania.

76. THYNNUS NIGER.

B.M.

Male. Length 7–8 lines.—Black: the head and thorax very closely punctured, and with silvery pubescence on the cheeks, coxæ, femora, pectus, and metathorax; the clypeus and mandibles yellow; the tips of the mandibles, margins of the clypeus, and two oblique spots on the latter, black; the wings hyaline with a yellowish tinge, the nervures and outer margins of the tegulæ obscurely ferruginous; the spines and claws of the tarsi ferruginous. Abdomen shining and finely punctured; a deeply impressed longitudinal channel in the middle of the basal segment; the margins of the segments constricted; the apical segment terminating in an acute spine which has a minute lateral spine at its base.

Hab. Tasmania.

77. THYNNUS (AGRIOMYIA) NITIDUS.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black, shining, and punctured; the head and thorax with a thin cinereous pubescence; tips of the mandibles ferruginous; the wings subhyaline, and slightly fuscous towards their apex, the nervures black; the tarsi obscurely ferruginous, with the spines ferruginous. Abdomen covered with fine shallow punctures, the margins slightly punc-

tured; beneath, smooth and shining; the apex terminating in a lanceolate appendage.

Hab. Australia.

78. *THYNNUS (AGRIOMYIA) UMBRIPENNIS.*

B.M.

Male. Length 5 lines.—Black and closely punctured; the head and thorax subopaque; the abdomen shining; wings dark brown, with a violet iridescence. Abdomen: the segments with their margins deeply constricted; beneath roughly punctured, the punctures confluent; the sixth ventral segment with a stout angular tooth on each side; the apical segment with deep coarse punctures, and terminating in a tridentate process.

Hab. Australia.

79. *THYNNUS (AGRIOMYIA) FERVENS.*

B.M.

Male. Length $5\frac{1}{2}$ lines.—Black: head and thorax very closely punctured and subopaque; the abdomen with distant very shallow punctures, and shining black; the mandibles, tibiae, tarsi, and knees ferruginous; the apical joints of the tarsi dusky; wings fulvo-hyaline, the nervures ferruginous; the head and thorax with a thin pubescence, which is pale fulvous on the disk and cinereous on the sides and beneath. Abdomen: the margins of the segments constricted; the apical ventral segment terminating in an angulated appendage which has a minute tooth at its apex.

Hab. Australia.

80. *THYNNUS (AGRIOMYIA) TENUATUS.*

B.M.

Male. Length 7 lines.—Black, subopaque, very closely punctured, and thinly covered with hoary pubescence; the mandibles shining black; the tarsi obscurely ferruginous beneath, the spines of the tarsi and the calcaria ferruginous; the wings hyaline, the nervures black; the abdomen longer than the head and thorax; the basal margin of the segments of the abdomen depressed; the apical segment with a triangular shape in the middle of its base, beneath which it is concavely truncate, and then is oblique to the apical margin, the triangular shape and the oblique portion longitudinally grooved; the basal segment not spined beneath or toothed, the segments slightly concave, the apical one obtuse.

Hab. Australia (Swan River).

This species has very much the aspect of a *Rhagigaster*, but, as the description shows, it is a true *Thynnus*.

81. THYNNUS (AGRIOMYIA) SEXMACULATUS.

B.M.

Male. Length $5\frac{1}{2}$ lines.—Black: head and thorax closely punctured and subopaque; abdomen very smooth and shining; legs ferruginous, with the coxæ and trochanters black, and the tarsi fuscous or fusco-ferruginous; the head, thorax, and legs thinly covered with hoary pubescence. The anterior margin of the clypeus and face, the mandibles, a narrow interrupted line on the anterior margin of the prothorax, and an ovate macula on each side of the second, third, and fourth segments of the abdomen, white; beneath, smooth, shining, and impunctate; the terminal segment of a broad lanceolate form, with a minute tooth at its apex.

Hab. Australia (Sydney).

82. THYNNUS (AGRIOMYIA) BIDENTATUS.

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black and shining: head closely punctured and thinly covered with cinereous pubescence; the clypeus, an ovate spot above each antenna, the mandibles, and an abbreviated line behind the eyes, yellow; a black line extending halfway down the clypeus; the anterior margin of the clypeus and the tips of the mandibles ferruginous. Thorax: a broad stripe on the anterior and posterior margins of the prothorax, a spot on the tegulæ, a quadrate spot on the mesothorax, an ovate one on the scutellum, the post-scutellum, an oblong spot at the sides of the metathorax, a large spot beneath the wings with a smaller one behind it, yellow; the tibiæ and tarsi ferruginous; a yellow spot at the apex of the anterior and intermediate femora outside; the intermediate and posterior tarsi dusky; the wings hyaline, the nervures ferruginous. Abdomen: the posterior margin of the segments broadly and deeply depressed, each segment with a large subovate macula on each side; beneath roughly punctured, the second and three following segments with a large yellow macula on each side, the fifth segment armed on each side with a long stout acute tooth which curves backwards; the apical segment lanceolate.

Hab. Australia (Swan River).

83. THYNNUS (AGRIOMYIA) COMBUSTUS.

B.M.

Male. Length 4 lines.—Black, with the abdomen red: the clypeus very much produced, ferruginous anteriorly and truncate, the margins on each side of the truncation and a stripe on the mandibles yellowish-white; two minute white spots between the antennæ. The anterior margin of the prothorax with a

narrow line on each side, a spot on the tegulæ, a minute one on the scutellum, and the post-scutellum, yellow; wings subhyaline, nervures fuscous. The base of the abdomen black, the margins of the segments deeply constricted; an oblong yellow spot on each side of the second and third segments; beneath, the apical ventral segment rounded at its apical margin and with a minute tooth in the middle.

Hab. Australia.

84. *THYNNUS (AGRIOMYIA) CRYPTOIDES.*

B.M.

Male. Length 4 lines.—Head and thorax black, the legs and abdomen ferruginous; the five or six apical joints of the antennæ arcuate; the orbits of the eyes interrupted at their vertex, the clypeus, margins of the face on each side of the clypeus, and the mandibles, yellow; the base of the clypeus black. Thorax bright shining black; the mesothorax punctured; the metathorax delicately transversely aciculate; the margins of the prothorax slightly interrupted in the middle, a spot on the mesothorax, an angular spot on the scutellum, a lunate one on the post-scutellum, yellow; the coxæ black, with their apex and the outside of the intermediate and posterior pairs ferruginous; the wings hyaline, the nervures ferruginous. Abdomen: the base black and subpetiolate; the apical ventral segment lanceolate, with a minute curved black spine at the apex.

Female. Length $2\frac{1}{2}$ lines.—Ferruginous; the thorax and the third, fourth, and fifth segments of the abdomen more or less fuscous; the head and the tibiæ and tarsi pale; the head smooth, the thorax punctured; the second segment of the abdomen with four deep transverse grooves, the following segments with scattered shallow punctures.

Hab. Australia (River Plenty).

85. *THYNNUS (AGRIOMYIA) VOLATILIS.*

B.M.

Male. Length $4\frac{1}{2}$ lines.—Black, with the abdomen and legs ferruginous. The anterior margins of the face and clypeus, the mandibles, a spot above the insertion of each antenna, and a very narrow line at the inner orbit of the eyes, yellow; an obscure ferruginous line on the posterior margin of the vertex, more or less interrupted. The anterior and posterior margins of the prothorax very narrowly testaceous; wings hyaline, their nervures fusco-ferruginous; the coxæ, trochanters, and base of the abdomen black.

Hab. Australia.

86. THYNNUS (AGRIOMYIA) TRYPHONOIDES. B.M.

Male. Length 4 lines.—Head and thorax black; abdomen and legs ferruginous. The clypeus much produced, its apex as well as the mandibles yellow, the latter ferruginous at their tips; antennæ shorter than the thorax, the joints subarcuate. The prothorax above, the tegulæ, and post-scutellum yellow; the wings subhyaline and iridescent, the nervures fuscous, becoming pale ferruginous towards their base; the coxæ, trochanters, and base of the femora black. Abdomen widened towards its apex, its extreme base and two transverse spots beneath, black; the extreme base of the fourth and fifth segments above, fuscous; the head and thorax with a thin pale fulvous pubescence.

Hab. Australia (Adelaide).

87. THYNNUS (AGRIOMYIA) CERCEROIDES. B.M.

Male. Length $4\frac{1}{2}$ lines.—Black, much variegated with yellow: the head and thorax strongly punctured; the clypeus, mandibles, a spot above the insertion of each antenna, a line on the inner and outer orbits of the eyes, yellow. Thorax: a line on the anterior and posterior margins of the prothorax (the former interrupted), a large irregular-shaped spot beneath the wings, with a smaller one behind it, a large curved macula at the sides of the metathorax, a lunate spot on the scutellum and the post-scutellum, yellow; the legs yellow, with black and ferruginous stains; the wings hyaline, the nervures testaceous. Abdomen: the segments deeply constricted, the five basal segments with oblong maculæ on each side, the maculæ emarginate in front; beneath, the second, third, fourth, and fifth segments with an oblong macula at their lateral margins, and the apical segment with a short stout tooth on each side.

Hab. Australia.

88. THYNNUS (AGRIOMYIA) TRISTIS. B.M.

Male. Length 5 lines.—Black: clothed with cinereous pubescence, rather densely so on the face and sides of the thorax; that on the abdomen thin and downy; the head and thorax closely punctured, the base of the metathorax shining and delicately striated; wings hyaline and iridescent, the nervures black; the tibiæ with pale testaceous spines at their apex.

Hab. Australia.

89. THYNNUS (AGRIOMYIA) RUFICORNIS. B.M.

Male. Length 5 lines.—Black: the head and thorax closely punctured, the base of the metathorax shining and impunctate;

abdomen shining, and having a number of scattered shallow punctures, covered with a thinly scattered griseous pubescence; wings hyaline and iridescent, the nervures and tegulæ rufo-testaceous. The antennæ, anterior margin of the clypeus, the mandibles and legs, ferruginous.

Hab. Australia (Swan River).

90. THYNNUS (AGRIOMYIA) SEDULUS. B.M.

Male. Length $3\frac{1}{2}$ lines.—Black, with the legs, the apex of the first, the second, third, and fourth segments of the abdomen ferruginous; a few scattered hairs on the head and thorax, the abdomen having a thin clothing of longer hair at its apex. The clypeus rufo-testaceous, with its margins, the inner orbit of the eyes, the mandibles, and an interrupted line behind the eyes, yellow; an interrupted line on the prothorax in front and a spot beneath the wings yellow; the coxæ and trochanters black; the wings hyaline and iridescent, their nervures, and also the tegulæ, rufo-testaceous.

Hab. Australia.

91. THYNNUS (AGRIOMYIA) FALLAX. B.M.

Male. Length 5 lines.—Black: head and thorax very closely punctured; abdomen smooth, shining, and with a few widely scattered delicate punctures. The clypeus with a small shining tubercle in the middle, its anterior margin truncate; the mandibles and antennæ ferruginous, four or five of the apical joints of the latter fuscous, and the tips of the former blackish; the wings flavo-hyaline, the nervures ferruginous, becoming testaceous towards the base of the wings, the tegulæ rufo-testaceous; the legs ferruginous, with the coxæ, trochanters, and base of the femora black; the apex of the abdomen with a little fulvous pubescence.

Hab. Australia (Adelaide).

92. THYNNUS (AGRIOMYIA) MINUTUS. B.M.

Male. Length $2\frac{1}{2}$ lines.—Black: the head and thorax variegated with yellow, the abdomen reddish in the middle. The clypeus, mandibles, and two abbreviated lines between the antennæ yellow. The anterior and posterior margins of the prothorax, the tegulæ, extreme base of the wings, a bell-shaped spot on the scutellum, a line at the sides of the metathorax, and a spot beneath the wings, yellow; the latter hyaline and iridescent, with the nervures rufo-testaceous; the legs rufo-testaceous; the coxæ black, spotted with yellow. Abdomen rufo-testaceous,

with the base and apical portion more or less fuscous, the extreme apex pale, the apical margins of the second, third, and fourth segments fuscous; a yellowish-white spot at the extreme lateral margin of each segment.

Hab. Australia.

93. *THYNNUS (AGRIOMYIA) MÆSTUS*.

Male. Length $6\frac{1}{2}$ lines.—Black: the head and thorax closely punctured, the legs red, the abdomen with a number of glaucous spots. The anterior margin of the clypeus yellowish-white; the mandibles ferruginous, their apex bidentate. Thorax: the prothorax with a narrow pale testaceous margin in front, the post-scutellum pale testaceous; wings fusco-hyaline, their nervures dark ferruginous. Abdomen shining, and having a number of transverse punctures, the apical portion of each segment smooth and impunctate; the second, third, fourth, and fifth segments with two central and one lateral irregularly-shaped glaucous spots; beneath, the second and two following segments with a central transverse spot.

Female. Length 4 lines.—Black: head and legs ferruginous; thorax punctured; the basal segment of the abdomen punctured, the second with four deep transverse grooves.

Hab. Australia (Port Philip). (Coll. W. W. Saunders, Esq.)

94. *THYNNUS (AGRIOMYIA) PETIOLATUS*.

Male. Length $4\frac{3}{4}$ lines.—Black: the head and thorax covered with strong confluent punctures; antennæ orange-red; wings hyaline, with their apical margins faintly clouded, the nervures dark fuscous; the intermediate and posterior tibiæ serrated exteriorly. Abdomen ovate, smooth and shining, the basal segment forming a short petiole at its base.

Hab. Australia (Hunter River). (Coll. W. W. Saunders, Esq.)

95. *THYNNUS (AGRIOMYIA) LUCIDUS*.

Male. Length $4\frac{1}{2}$ lines.—Jet-black and shining: the mandibles and legs pale ferruginous; the clypeus elevated, carinate in the middle and bidentate at the apex. The head and thorax with shallow punctures; the metathorax smooth and shining, its truncation rugose; the wings hyaline and iridescent, the nervures ferruginous. Abdomen smooth and shining, very delicately punctured, the margins of the segments slightly depressed.

Hab. Tasmania. (Coll. W. W. Saunders, Esq.)

96. THYNNUS (AGRIOMYIA) MAURUS.

Male. Length 10 lines.—Black : head and thorax finely punctured, the punctures distant on the vertex, disk of the mesothorax, and on the scutellum; the clypeus convex, its anterior margin truncate; the cheeks, thorax on the sides and beneath covered with cinereous pubescence; the legs have also a cinereous pubescence; the wings dark brown, with a bright purple iridescence; the apex of the anterior wings pale. Abdomen smooth and shining, and having a few distant minute punctures; the margins of the segments depressed, and with a transverse impressed line at the base of each segment; the apical segment above rounded, the ventral plate somewhat triangular, with a minute tooth at the apex; the sixth ventral segment with a tooth at each posterior lateral angle.

Hab. Australia. (Coll. W. W. Saunders, Esq.)

97. THYNNUS (AGRIOMYIA) CRABRONIFORMIS.

Male. Length 4 lines.—Black, with yellow bands on the abdomen; the mandibles and clypeus yellow; the antennæ ferruginous beneath. Thorax: two oblique lines on the prothorax, a spot on the tegulæ, a minute one on the scutellum and the post-scutellum, yellow; wings hyaline, with the nervures rufo-testaceous; the tibiæ, tarsi, and tips of the femora rufo-testaceous, the posterior tarsi yellow, the apical joint ferruginous. Abdomen: the second, fifth, sixth, and seventh segments yellow.

Hab. Australia. (Coll. W. W. Saunders, Esq.)

98. THYNNUS (AGRIOMYIA) ANILITATIS.

Male. Length $6\frac{1}{2}$ lines.—Black : head and thorax covered with long pubescence, that on the head above and on the disk of the thorax slightly fulvous; on the cheeks, thorax beneath, and on the metathorax and legs it is cinereous; the clypeus with a central longitudinal carina; the mandibles yellow. The wings hyaline or faintly yellowish, the nervures brown, the stigma black; the tibiæ with their calcaria white, the claws of the tarsi ferruginous. Abdomen subpetiolate, the margins of the segments depressed, sparingly pubescent above, more thickly so beneath.

Female. Length $4\frac{1}{2}$ lines.—Black : the head smooth, shining, and delicately and distantly punctured. Thorax finely rugose, metathorax obliquely truncate; the articulations of the legs and the spines of the tarsi ferruginous. Abdomen: the basal segment rugose, with a transverse carina near its apex; the second segment with a transverse carina at the base and apex, with the intervening space coarsely rugose; the following segment rugose,

with a smooth shining space at the base; the rugose portion of the segments covered with cinereous pubescence.

Hab. Australia.

99. *THYNNUS (AGRIOMYIA) IRIDIPENNIS*.

Male. Length $3\frac{1}{4}$ lines.—Black, shining, and punctured: the anterior margin of the clypeus and of the face, and a spot at the base of the mandibles, white; a minute spot above each antenna and a minute obscure one at the summit of the eyes yellow; the head with long thin cinereous pubescence. Thorax: an obscure line on each side of the anterior margin of the prothorax, the posterior margin, the tegulae, a spot on the scutellum, and the post-scutellum, obscure yellow; the calcaria and spines of the tarsi white; the wings hyaline and splendidly iridescent, the nervures testaceous. Abdomen: the margins of the segments constricted; beneath, the apical segment truncate, the angles of the truncation with minute teeth, and with a longer acute one in the middle.

Female. Length $1\frac{1}{2}$ line.—Obscure rufo-testaceous: head smooth and shining; thorax sparingly punctured; the legs, basal and apical segments of the abdomen pale rufo-testaceous; the second segment with two transverse carinae.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

100. *THYNNUS (AGRIOMYIA) TRUNCATUS*.

Male. Length $4-4\frac{1}{2}$ lines.—Black, slightly shining, and thinly clothed with cinereous pubescence: the clypeus truncate anteriorly, the margin on each side of the truncation, a spot at the base of the mandibles, a narrow line on each side of the anterior margin of the prothorax, and the post-scutellum, or a line upon it, yellowish-white; the wings hyaline, the nervures black. The margins of the segments of the abdomen deeply constricted; beneath, the apical margins narrowly testaceous, the terminal segment truncate, or slightly emarginate its entire width at its apical margin; in the middle of the emargination an acute spine.

Hab. Australia (Lower Plenty, Victoria). (Coll. R. Bakewell, Esq.)

101. *THYNNUS (AGRIOMYIA) TRIVIALIS*.

Male. Length 4 lines.—Black: head and thorax closely punctured and opaque, the metathorax and abdomen smooth and shining, the former very delicately reticulated. The anterior margin of the clypeus and of the face, as well as the mandibles, yellow; the legs ferruginous, the coxae and trochanters black, the claw-joint of the tarsi fuscous; the anterior and posterior

margins of the prothorax, an ovate spot on the scutellum, and the post-scutellum, yellow; the fasciæ on the prothorax slightly interrupted; wings hyaline, faintly yellowish. Abdomen: a pale yellow ovate spot on each side of the second, third, and fourth segments.

Female. Length 3 lines.—Brown-black: the head smooth and shining, with a few scattered punctures; the thorax and abdomen finely rugose, the basal margins of the segments of the abdomen finely striated; the second segment with four deep transverse grooves; the apical margins of the segments narrowly, and the apical segment entirely, rufo-testaceous; the face anteriorly, the antennæ, mandibles, and legs rufo-testaceous.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

102. *THYNNUS (AGRIOMYIA) ICHNEUMONIFORMIS.*

Male. Length $4\frac{1}{2}$ lines.—Head, thorax, and extreme base of the abdomen black; legs and abdomen ferruginous; the coxæ black, the trochanters more or less black; the anterior margin of the face and clypeus, uniting with a triangular spot on the latter, and the mandibles, yellow; sometimes the margins of the face and clypeus are black; two oblique yellow spots between the antennæ, an interrupted line on the collar, and a curved line before the tegulæ, yellow. The wings hyaline, the nervures brown; the apical segments of the abdomen sometimes with blackish stains, the apex rounded; beneath, the apical segment is narrowed and ciliated.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

103. *THYNNUS (AGRIOMYIA) BREVICORNIS.*

Male. Length $3\frac{1}{2}$ –5 lines.—Black, slightly shining, and punctured: the antennæ shorter than the head and thorax; thinly clothed with cinereous pubescence; the thorax rather strongly punctured above, the metathorax rugose, with the base very delicately rugose; the wings hyaline and iridescent, the nervures testaceous. Abdomen: the margins of the segments depressed, each segment with a raised curved shape on each side, which is impunctate or slightly punctured; beneath, strongly punctured, the terminal segment rounded at its apex, which is ciliated, with short rigid hairs.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

104. *THYNNUS (AGRIOMYIA) MONILICORNIS.*

Male. Length 4– $4\frac{1}{2}$ lines.—Black, slightly shining: head and thorax closely punctured, thinly covered with cinereous glittering

pubescence; the joints of the antennæ arcuate, or rather, much produced at their base beneath. Thorax: the wings hyaline, faintly tinted towards their apex, the nervures black. Abdomen much narrowed at the base, subpetiolate, the basal segment with a central impressed line; the apical appendage narrowed at the base, and with an angular tooth in the middle of its apical margin.

Female. Length 2 lines.—Head, thorax, legs, and base of the abdomen rufo-testaceous; head and thorax sparingly punctured, the truncation of the metathorax smooth and shining; the second segment of the abdomen transversely rugose; the third, fourth, and fifth segments fusco-ferruginous, and thinly sprinkled with short cinereous hairs; the apex pale testaceous.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

105. *THYNNUS (AGRIOMYIA) CALCARATUS*.

Male. Length 4 lines.—Black: head and thorax closely punctured and subopaque, the base of the metathorax and the abdomen smooth and shining; the mandibles and anterior margin of the clypeus and face pale yellow; the head, thorax beneath and on the sides with long cinereous pubescence; the wings hyaline, with a brilliant iridescence; the tibiae, tarsi, and tips of the femora ferruginous; the posterior femora with a blunt tooth in the middle beneath.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

106. *THYNNUS (LOPHOCHEILUS) VILLOsus*.

Lophochelus villosus, Guér. *Mag. Zool.* (1842); *Mon. Thynn.* 12. pl. 103.

Hab. Australia.

107. *THYNNUS (LOPHOCHEILUS) DISTINCTUS*.

Lophochelus distinctus, Guér. *Mag. Zool.* (1842); *Mon. Thynn.* 12. pl. 103.

Hab. Australia.

108. *THYNNUS (LOPHOCHEILUS) COLLARIS*.

Lophochelus collaris, Guér. *Mag. Zool.* (1842); *Mon. Thynn.* 13. Hab. Australia.

109. *THYNNUS (ENTELES) BICOLOR*.

Thynnus (Enteles) bicolor, Westw. *Arc. Ent.* ii. 144. pl. 82. f. 4 ♀.
Hab. Australia (King George's Sound).

110. THYNNUS (CATOCHEILUS) DIVERSUS.

Catocheilus Klugii, Guér. *Mag. Zool.* (1842); *Mon. Thynn.* 8, 9 ♂ ♀.

Hab. Australia (Swan River).

111. THYNNUS (EIRONE) DISPAR.

Eirone dispar, *Westw. Arc. Ent.* ii. 144. 82. f. 5 ♂, f. 6 ♀.

Hab. Australia (Adelaide).

112. THYNNUS (EIRONE) TUBERCULATUS.

Male. Length $3\frac{1}{2}$ lines.—Black: the head and thorax strongly and closely punctured, thinly covered with short white downy pubescence; the clypeus with a lanceolate white mark in the centre, which has a minute tubercle on each side about the middle; the mandibles ferruginous, with a white line at their base. The prothorax with a slightly interrupted white line on the anterior margin, and a widely interrupted one posteriorly; the wings splendidly iridescent and hyaline, the nervures testaceous; the tibiæ and tarsi rufo-testaceous. Abdomen lanceolate, the apical segment rugose, pointed at the apex.

Female. Length $2\frac{1}{2}$ lines.—Pale ferruginous: the legs pale rufo-testaceous; the head oblong-quadrated; the thorax of the same form as in *T. vitripennis*; the metathorax delicately aciculate and with a few elongate punctures. Abdomen elongate, each segment with a curved dark ferruginous line on each side; thinly covered with strong elongate punctures; the apex acute.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

113. THYNNUS (EIRONE) VITRIPENNIS.

Male. Length $3\frac{1}{2}$ lines.—Black, shining: the head and thorax with shallow punctures; slightly pubescent at the sides of the head, on the thorax beneath and on the sides, and on the posterior portion of the metathorax; the legs have also a slight griseous pubescence. The clypeus with a sharp carina in the middle and a triangular white spot in front; a narrow white line runs from the clypeus to the margin of the eyes; a line at the base of the mandibles, and two small oblique ones between the antennæ, white; the mandibles obscurely ferruginous. Thorax: a narrow white line on the anterior margin of the prothorax; wings hyaline, faintly tinted with yellow, and splendidly iridescent; the legs rufo-testaceous, with the tarsi palest. Ab-

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Female. Length $2\frac{1}{2}$ lines.—Pale ferruginous: the head oblong-quadrate; the thorax narrower than the head, the sides of the prothorax slightly rounded, the mesothorax narrow and quadrate above; the metathorax widened to its apex, which is rounded. Abdomen elongate, as long as the head and thorax, and entirely smooth and shining; the apex acute.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

114. *THYNNUS ATTENUATUS*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Head black, compressed, smooth, subopake, rounded behind, anteriorly truncate; the face, mandibles, antennæ, legs, and thorax anteriorly, rufo-testaceous; the thorax compressed, very narrow anteriorly; the metathorax narrowed at the base; abdomen obscure rufo-testaceous, with a tuft of pale pubescence at the base; the second segment transversely striated.

Hab. Australia.

115. *THYNNUS FIMBRIATUS*.

B.M.

Female. Length 4 lines.—Head and abdomen black; thorax and legs ferruginous, the prothorax prolonged into a neck; thorax strongly punctured; the first and second segments of the abdomen transversely striated, the three following punctured at their apical margins, the apical one longitudinally striated; the base fringed with long silvery-white hair.

Hab. Australia.

116. *THYNNUS QUADRATUS*.

B.M.

Female. Length 3 lines.—Head and thorax anteriorly ferruginous; thorax posteriorly, legs, and abdomen obscure fusco-ferruginous; thorax oblong-quadrate, constricted between the meso- and metathorax, the latter vertically truncate, the upper margin of the truncation rounded; the second segment of the abdomen transversely furrowed in the middle.

Hab. Australia.

117. *THYNNUS SULCATUS*.

B.M.

Female. Length 4 lines.—Head, thorax, and legs pale rufo-testaceous; abdomen fusco-ferruginous, palest towards the apex; the front very prominent, with a broad deep sulcation on each side; the metathorax oblique, smooth and shining.

Hab. Australia.

118. THYNNUS COMPRESSUS.

B.M.

Female. Length 5 lines.—Head bright castaneous, flattened, smooth and shining; thorax beneath, the legs, and second segment of the abdomen rufo-testaceous; the disk of the thorax obscure fusco-ferruginous; the anterior margin transverse, with the lateral angles acute; the metathorax oblique, with a few delicate punctures, the pro- and mesothorax with scattered punctures.

Hab. Australia.

119. THYNNUS SULCIFRONS.

B.M.

Female. Length 5 lines.—Head ferruginous, flattened, widened and rounded behind the eyes, with a longitudinal excavation on each side; the mandibles simple, falcate, and acute at the apex, the apex black; thorax black, smooth and shining; the metathorax narrowed at the base, truncate behind. Abdomen variegated with yellow bands; the basal segment with an uninterrupted fascia, a spot on each side of the second, the third and fourth with an interrupted fascia.

Hab. Australia.

120. THYNNUS MOLITOR.

B.M.

Female. Length 10 lines.—Black, shining: front coarsely punctured; prothorax transverse in front and narrowed behind; metathorax obliquely truncate; base of the abdomen closely punctured, the second segment transversely striated, the apical one longitudinally so.

Hab. S. Australia.

(Probably the ♀ of *T. Klugii*.)

121. THYNNUS DILATATUS.

B.M.

Female. Length $6\frac{1}{2}$ lines.—Black, slightly shining: head small; anterior margin of the thorax slightly incurved; metathorax abruptly truncate; intermediate tibiae very broadly dilated; the two basal segments of the abdomen transversely striated, the four following smooth and shining.

Hab. Australia.

122. THYNNUS ADUSTUS.

B.M.

Female. Length 6 lines.—Dark reddish-brown above, beneath ferruginous; closely punctured, the punctures confluent on the head and thorax; the metathorax oblique; the legs, antennae, and front of the head ferruginous.

Hab. Australia.

123. *THYNNUS CRASSIPES*.

B.M.

Female. Length 5 lines.—Black: head shining, with large deep punctures; thorax smooth and shining in front, the anterior margin incurved to the form of the head; metathorax punctured, obliquely truncate, and covered, as well as the base of the abdomen and the legs, with glittering white pubescence; the femora and tibiæ incrassate; the two basal segments of the abdomen with deep transverse furrows; the apical segment compressed, forming above a flattened oblong surface, narrowest at the base, which is grooved in curves transversely; the apex with a semicircular thin membrane.

Hab. Australia.

124. *THYNNUS LÆVICEPS*.

B.M.

Female. Length 4 lines.—Dark red-brown: the head and thorax in front smooth and shining; the metathorax oblique and strongly punctured, sprinkled with silvery hair, as are also the legs and base of the abdomen; the truncated portion of the abdomen punctured, above smooth and shining; the second segment transversely striated; the apical segment longitudinally striated.

Hab. Australia.

125. *THYNNUS SERRIPES*.

B.M.

Female. Length 4 lines.—Black: the legs ferruginous, the coxæ black, the intermediate and posterior tibiæ serrated externally and covered with rigid setæ, the posterior tarsi fuscous; the head and thorax with distant punctures; the metathorax truncate, its upper surface semicircular; the abdomen with scattered punctures; the second segment irregularly transversely striated, the apical segment longitudinally so.

Hab. Australia.

126. *THYNNUS SIGNATUS*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Ferruginous: the abdomen with five broad yellow fasciæ, the three apical ones slightly interrupted; all the fasciæ with a ferruginous spot or line at their lateral margins; the head and thorax punctured; the metathorax blackish.

Hab. Australia.

127. *THYNNUS PUNCTATUS*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Head and thorax brownish-black; the abdomen black, entirely covered with punctures, those on

the head and thorax strongest; thorax strangulated in the middle; the metathorax oblique.

Hab. Australia.

128. *THYNNUS FLAVOFASCIATUS*.

B.M.

Female. Length $4\frac{1}{2}$ lines.—Head and thorax rufo-ferruginous; the head posteriorly, the thorax in front, and two large oblique maculæ on the metathorax, yellow; the tibiæ serrated exteriorly; the abdomen dark ferruginous, with five broad yellow bands, the second and third narrowest, and the apical one slightly interrupted in the middle.

Hab. Australia (Swan River).

129. *THYNNUS TRISULCATUS*.

B.M.

Female. Length 3 lines.—Black: head and thorax strongly punctured; antennæ and mandibles ferruginous; legs rufo-piceous, with the tarsi paler; thorax transverse in front, produced into a neck, deeply strangulated in the middle; metathorax narrow at the base, rounded and widened at the apex; abdomen with shallow punctures, the second segment with three transverse deep furrows.

Hab. Australia.

130. *THYNNUS LÆYIFRONS*.

B.M.

Female. Length 4 lines.—Nigro-piceous: head compressed, very smooth and shining; flagellum fulvous beneath; mandibles rufo-testaceous; the anterior margin of the thorax rounded, notched in the middle, the notch continued into an abbreviated channel; the metathorax oblique, narrowed at the base; abdomen with fine shallow punctures, the second segment with four deep transverse furrows.

Hab. Australia.

131. *THYNNUS CONNECTENS*.

B.M.

Female. Length $5\frac{1}{2}$ lines.—Dark rufo-fuscous: the head rufo-testaceous, smooth and shining; the metathorax obliquely truncate; an irregular narrow transverse band on the first segment of the abdomen, a spot on each side of the second, the three following with broad bands slightly interrupted, the bands with a minute ferruginous spot laterally; the apical segment longitudinally striated.

Hab. West Australia.

132. THYNNUS LONGICEPS.

B.M.

Female. Length $2\frac{3}{4}$ lines.—Black, smooth, and shining: the antennæ, mandibles, and tarsi pale rufo-testaceous; the head oblong, narrowed behind; the prothorax with a deep central depression in front; the intermediate and posterior tibiæ serrated; the second segment transversely striated, the margins of the segments pale testaceous.

Hab. Tasmania.

133. THYNNUS ROTUNDICEPS.

B.M.

Female. Length 4 lines.—Blackish-brown, with the antennæ, face anteriorly, mandibles, tarsi, margins of the abdominal segments, and the tip of the abdomen, rufo-testaceous; the head rounded and flattened, with the eyes placed very forward at the sides, close to the base of the mandibles.

Hab. Australia.

134. THYNNUS PLANIFRONS.

B.M.

Female. Length 3 lines.—Black, with a brown tinge: the head very smooth and shining; the thorax and abdomen with large distant punctures; the flagellum of the antennæ and apical joints of the tarsi pale rufo-testaceous; the apical margins of the abdominal segments pale testaceous; the second segment with a deep transverse channel.

Hab. Australia.

Species of South America and Brazil.

135. THYNNUS (TELEPHOROMYIA) RUFIPES.

Telephoromyia rufipes, Guér. *Voy. Coq. Zool.* ii. 216 ♂.
Thynnus rufipes, Klug, *Berl. Abhandl.* (1842) 41. 59.

Hab. Chili (Patagonia).

136. THYNNUS (ONODONTYRA) TRICOLOR.

Onodontyra tricolor, Westw. *Proc. Zool. Soc. Lond.* (1835) pl. 3. 71 ♂.

Thynnus tricolor, Klug, *Berl. Abhandl.* (1842) 40. 57.

Hab. Chili.

137. THYNNUS (ORNEPTES) NIGRICEPS.

Orneptes nigriceps, Guér. *Voy. Coq. Zool.* ii. 239 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 104.

Thynnus nigriceps, Klug, *Berl. Abhandl.* (1842) 42. 60.

Hab. Chili.

138. THYNNUS (ELAPHROPTERA) PALLIDIPENNIS. B.M.

Myrmosa dimidiata, Halid. *Linæ. Trans.* xvii. 328. 46 ♂.

Elaphroptera dimidiata, Guér. *Voy. Coq. Zool.* ii. 240; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Elaphroptera pallidipennis, Guér. *Voy. Coq. Zool.* ii. 241.

Thynnus dimidiatus, Klug, *Berl. Abhandl.* (1842) 38. 49.

Hab. Chili.

139. THYNNUS (ELAPHROPTERA) ATER.

Elaphroptera atra, Guér. *Voy. Coq. Zool.* ii. 241 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Thynnus ater, Klug, *Berl. Abhandl.* (1842) 39. 53 ♂.

Hab. Chili.

140. THYNNUS FASCIATUS.

Elaphroptera fasciata, Guér. *Voy. Coq. Zool.* ii. 242; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Thynnus fasciatus, Klug, *Berl. Abhandl.* (1842) 25. 21.

Hab. Patagonia.

141. THYNNUS CORNUTUS.

Elaphroptera cornuta, Guér. *Voy. Coq. Zool.* ii. 243 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Thynnus cornutus, Klug, *Berl. Abhandl.* (1842) 33. 39.

Hab. Brazil.

142. THYNNUS MACULIPENNIS.

Elaphroptera maculipennis, Guér. *Voy. Coq. Zool.* ii. 243 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Thynnus maculipennis, Klug, *Berl. Abhandl.* (1842) 26. 24.

Hab. Brazil.

143. THYNNUS APICALIS.

Elaphroptera apicalis, Guér. *Voy. Coq. Zool.* ii. 244 ♂.

Thynnus apicalis, Klug, *Berl. Abhandl.* (1842) 27. 27; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.

Hab. Brazil.

144. THYNNUS (AMMODROMUS) FRONTALIS.

Ammodromus frontalis, Guér. *Voy. Coq. Zool.* ii. 245 ♂ ; *Mag. Zool.* (1842) *Mon. Thynn.* p. 15. pl. 105.

Thynnus frontalis, Klug, *Berl. Abhandl.* (1842) 37. 47.

Hab. Patagonia.

145. THYNNUS (AMMODROMUS) RUFICEPS.

Ammodromus ruficeps, Guér. *Voy. Coq. Zool.* ii. 245 ♀ .

Thynnus ruficeps, Klug, *Berl. Abhandl.* (1842) 37. 48.

Hab. Brazil (Corrientes).

146. THYNNUS (AMMODROMUS) SCOLIAEFORMIS.

Myrmecodes scoliaeformis, Halid. *Linn. Trans.* xvii. 327. 45 ♀ .

Ammodromus scoliaeformis, Guér. *Voy. Coq. Zool.* ii. 246.

Thynnus scoliaeformis, Klug, *Berl. Abhandl.* (1842) 38. 50.

Hab. Chili.

147. THYNNUS (AMMODROMUS) VARIUS.

Myrmecoda varia, Perty, *Del. An. Art.* p. 138. t. 27. f. 10 ♀ .

Ammodromus varius, Guér. *Voy. Coq. Zool.* p. 246.

Thynnus varius, Klug, *Berl. Abhandl.* (1842) 30. 32.

Hab. Brazil.

148. THYNNUS (AMBLYSOMA) LATREILLII.

Thynnus (Amblysoma) Latreillii, Westw. *Guérin's Mag. Zool.* (1841-2) pl. 80 ♂ .

Hab. Brazil.

149. THYNNUS ICHNEUMONEUS.

Thynnus ichneumoneus, Klug, *Berl. Abhandl.* (1842) 25. 22.

Hab. Brazil.

150. THYNNUS CONSOBRINUS.

Thynnus consobrinus, Klug, *Berl. Abhandl.* (1842) p. 26. 23.

Hab. Brazil.

151. THYNNUS INTERRUPTUS.

Thynnus interruptus, Klug, *Berl. Abhandl.* (1842) 26. 25 ♂ .

Hab. Brazil.

152. THYNNUS ANALIS.

Thynnus analis, *Klug, Berl. Abhandl.* (1842) 27. 26 ♂.

Hab. Brazil.

153. THYNNUS MYSTACINUS.

Thynnus mystacinus, *Klug, Berl. Abhandl.* (1842) 27. 28 ♂.

Hab. Brazil.

154. THYNNUS HÆMORRHOIDALIS.

Thynnus hæmorrhoidalis, *Klug, Berl. Abhandl.* (1842) 28. 29 ♂.

Hab. Brazil.

155. THYNNUS PICTUS.

Thynnus pictus, *Klug, Berl. Abhandl.* (1842) 29. 30 ♀.

Hab. Brazil.

156. THYNNUS ORNATUS.

Thynnus ornatus, *Klug, Berl. Abhandl.* (1842) 29. 31 ♀.

Hab. Brazil.

157. THYNNUS INTERMEDIUS.

Thynnus intermedius, *Klug, Berl. Abhandl.* (1842) 30. 33 ♀.

Hab. Brazil.

158. THYNNUS PUBESCENS.

Thynnus pubescens, *Klug, Berl. Abhandl.* (1842) 31. 34 ♂.

Hab. Brazil.

159. THYNNUS LEPIDUS.

Thynnus lepidus, *Klug, Berl. Abhandl.* (1842) 31. 35 ♂.

Hab. Brazil.

160. THYNNUS VINCULATUS.

Thynnus vinculatus, *Klug, Berl. Abhandl.* (1842) 32. 36.

Hab. Brazil.

161. THYNNUS TRIFASCIATUS.

Scotena trifasciata, *Klug, Mag. d. Ges. Nat. Fr. z. Berl.* iv. p. 40.
t. 1. f. 4 ♂.

Thynnus trifasciatus, *Klug, Berl. Abhandl.* (1842) 32. 37.

Hab. Brazil.

162. THYNNUS HISTRIO.

Thynnus histrio, *Klug, Berl. Abhandl.* (1842) 33. 38 ♂.

Hab. Brazil.

163. THYNNUS VERSICOLOR.

Thynnus versicolor, *Klug, Berl. Abhandl.* (1842) 34. 40 ♂.

Hab. Brazil.

164. THYNNUS LATERALIS.

Thynnus lateralis, *Klug, Berl. Abhandl.* (1842) 34. 41. f. 6 ♂.

Hab. Brazil.

165. THYNNUS CLITELLATUS.

Thynnus clitellatus, *Klug, Berl. Abhandl.* (1842) 35. 42. f. 5 ♀.

Hab. Brazil (Minas Geraes).

166. THYNNUS SPHEGEUS.

Thynnus sphegeus, *Klug, Berl. Abhandl.* (1842) 35. 43 ♂.

Hab. Brazil.

167. THYNNUS QUADRICINCTUS.

Thynnus quadricinctus, *Klug, Berl. Abhandl.* (1842) 36. 44 ♂.

Hab. Brazil.

168. THYNNUS VULPINUS.

Thynnus vulpinus, *Klug, Berl. Abhandl.* (1842) 36. 45 ♂.

Hab. Brazil.

169. THYNNUS HÆMATODES. Plate III. fig. 16 ♂.

Thynnus hæmatodes, *Klug, Berl. Abhandl.* (1842) 37. 46. f. 7 ♂,
f. 8 ♀.

Hab. Brazil.

170. THYNNUS ÆTHIOPS.

B.M.

Thynnus æthiops, *Klug, Berl. Abhandl.* (1842) 38. 51 ♂.

Hab. Brazil.

171. THYNNUS ANTHRACINUS.

Thynnus anthracinus, *Klug, Berl. Abhandl.* (1842) 39. 52 ♂.

Hab. Brazil.

172. THYNNUS TARSATUS.

Thynnus tarsatus, *Klug, Berl. Abhandl.* (1842) 39. 54 ♂.

Hab. Brazil.

173. THYNNUS PHILANTHOIDES.

Thynnus philanthoides, *Klug, Berl. Abhandl.* (1842) 40. 55.
f. 9 ♂.

Hab. Brazil (Porto Alegre).

174. THYNNUS SCUTELLARIS.

Thynnus scutellaris, *Klug, Berl. Abhandl.* (1842) 40. 56 ♂.

Hab. Brazil (St. Joao del Rey).

175. THYNNUS LÆTUS.

Thynnus lætus, *Klug, Berl. Abhandl.* (1842) 41. 58. f. 10 ♂.

Hab. Chili.

176. THYNNUS ELEGANS.

Male. Length 9 lines.—Black, variegated with yellow: the mandibles, clypeus, face on each side of it, and a broad stripe behind the eyes, yellow. The anterior and posterior margins of the prothorax, a large oblong macula beneath the wings, the scutellum, post-scutellum, and metathorax, yellow; the legs pale ferruginous, the femora yellow beneath, above black; wings slightly coloured, with a fuscous cloud occupying the apex of the marginal and the third submarginal cells. Abdomen: the basal segment yellow, with a black line down the middle, the following segments with a large ovate macula on each side; the head and thorax with confluent punctures; the abdomen with close, fine, shallow punctures.

Hab. South America.

177. THYNNUS DECORUS.

B.M.

Male. Length 6 lines.—Black, shining, and punctured throughout; not very closely so: the clypeus, mandibles, inner orbits of the eyes, and an abbreviated line behind them, yellow. The anterior and posterior margins of the prothorax yellow, the former slightly, the latter widely interrupted; the tegulæ, an irregularly-shaped spot beneath the wings, a spot on the disk of the mesothorax, a lunate one on the scutellum, the post-scutellum and a spot on each side, and a large curved spot on each side of the metathorax nearly meeting in the middle, yellow; wings hyaline and iridescent, with a dark fuscous cloud in the marginal

cell, the apical margins faintly clouded. Abdomen: the margins of the segments constricted; the basal segment with a fascia, and the second, third, and fourth with an interrupted one a little before their apical margins, the fascia widened at the lateral margins of the segments; the apical segment rugose, with elongate punctures.

Hab. Brazil (Santarem).

178. *THYNNUS PLAGIATUS*.

Male. Length $7\frac{1}{2}$ lines.—Black: the clypeus, sides of the face, a spot above each antenna, the mandibles, and head behind the eyes, yellow. Thorax: the anterior and posterior margins of the prothorax, a quadrate spot in the middle of the mesothorax, the tegulæ in front and a spot behind them, the scutellum, post-scutellum, and metathorax, yellow; the femora yellow beneath; the anterior tibiæ and all the tarsi ferruginous; the wings hyaline, the nervures ferruginous; a fuscous spot occupies the apex of the marginal cell and the third submarginal cell. Abdomen: the first and four following segments with a large ovate yellow spot on each side.

Hab. South America.

179. *THYNNUS (AGRIOMYIA) GRATIOSUS*.

Male. Length 9 lines.—Black: finely punctured on the head and thorax; the seven apical joints of the antennæ arcuate; the inner orbits of the eyes, the lower portion of the outer orbits, a narrow line on the posterior margin of the vertex, which unites with the yellow line on the cheeks and is interrupted in the middle above, a spot between the ocelli, another at the insertion of each antenna, a spot on the clypeus, and the mandibles, yellow. Thorax: the anterior and posterior margins of the prothorax, three small oblong spots on the mesothorax, a line over the tegulæ, a spot on the scutellum and a smaller one at its basal angles, the post-scutellum, and the sides of the metathorax, yellow, the latter with a large irregularly-shaped black blotch; an irregular curved stripe beneath the wings, the femora beneath, and the coxæ spotted with yellow; the wings fulvo-hyaline. Abdomen: the four basal segments yellow, with their basal and apical margins ferruginous, and a number of small ferruginous spots at the lateral margins; an oblong black stain on the basal segment, emitting a short fork on each side at its apex; the sixth segment with an angular reddish-yellow spot on each side.

Hab. South America. (Coll. W. W. Saunders, Esq.)

180. THYNNUS (AGRIOMYIA) AMPLIPENNIS.

Male. Length 9 lines.—Shining black : head and thorax very closely punctured, the metathorax very delicately punctured and shining; the scutellum elevated into a tubercle; wings ample and of a rich golden-fulvous colour, the nervures ferruginous. Abdomen : the first segment much narrowed at the base, which has a deep abbreviated channel; the margins of the segment slightly depressed, covered with short black pubescence, and with a number of longer hairs at the tip; the head, sides of the thorax, and the anterior and intermediate tibiae with long black hairs.

Hab. South America. (Coll. W. W. Saunders, Esq.)

Genus 2. ÆLURUS.

Agriomyia, pt., *Guér. Mag. Zool.* p. 5 (1842).

Ælurus, *Klug, Berl. Abhandl.* 42 (1840–42).

Species of Australia.

1. ÆLURUS ABDOMINALIS.

B.M.

Agriomyia abdominalis, *Guér. Mag. Zool.* p. 5 (1842).

Ælurus abdominalis, *Westw. Arc. Ent.* ii. 122. pl. 77. f. 5 ♂.

Thynnus fervidus, *Ericks. Wiegmann. Arch.* (1842) 263. 237 ♂.

Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

Of this species, which has the head and thorax black and the abdomen red, I have seen a fine variety with the thorax also red, having only a few dusky stains behind the scutellum, in the Collection of R. Bakewell, Esq.

2. ÆLURUS MÆRENS.

Ælurus mærens, *Westw. Arc. Ent.* ii. 124 ♂.

Hab. Australia (Melbourne).

3. ÆLURUS SPINOLÆ.

Agriomyia spinolæ, *Guér. Mag. Zool.* (1842) p. 6.

Hab. Australia.

4. ÆLURUS INCANUS.

B.M.

Male. Length 7 lines.—Black : the head and thorax with strong confluent punctures, the metathorax more finely punctured, shining, and with long cinereous pubescence, the cheeks

with a long beard of the same colour; the wings hyaline, very slightly coloured, with a fuscous cloud at the apex of the marginal cell; the tibiæ and tarsi ferruginous, the apical joints of the latter fuscous. Abdomen shining and covered with shallow punctures, the base and beneath with cinereous pubescence; the apical ventral segment rounded at the apex, and with a minute tooth in the middle.

Hab. Australia (Port Stephen).

5. *ÆLURUS SENEX.*

B.M.

Male. Length 5 lines.—Black: the head and thorax strongly punctured; the abdomen shining, slightly and delicately punctured; the face covered with cinereous pubescence, the cheeks with a long fringe of the same colour; the cheeks have a short, stout, acute tooth close to the base of the mandibles. The thorax with long loose cinereous pubescence; the mesothorax strongly punctured; the metathorax shining and finely punctured; the wings slightly coloured, with the nervures black. The abdomen shining and delicately punctured, the base and apex of the abdomen more strongly punctured; the basal segment with a central deeply impressed line; beneath and at the apex is a thin, long, loose pubescence; the apical ventral segment with a central acute tooth and a short rounded one on each side, and a short acute one outside.

Hab. Australia.

6. *ÆLURUS AURIFRONS.*

B.M.

Male. Length $7\frac{1}{4}$ lines.—Black, with the legs, the apical margin of the basal segment, and the second and third entirely red; the face and cheeks with a golden-yellow pubescence; the sides of the head fringed with long pale yellow hairs; a short blunt tooth on the cheeks, close to the base of the mandibles. Thorax: the disk with golden-coloured pubescence; the metathorax, sides, and beneath with cinereous; the coxæ and trochanters black; the wings flavo-hyaline, the nervures ferruginous, the costal nervure blackish. Abdomen smooth and shining; the second segment beneath, tuberculate in the middle of its base; the apical segment rounded, with an acute spine in the middle.

Hab. W. Australia.

7. *ÆLURUS VULPINUS.*

B.M.

Male. Length 7 lines.—Black: head and thorax very closely punctured and opaque; the abdomen shining and delicately punc-

tured; the clypeus with the centre of its anterior margin testaceous; the mandibles ferruginous at their apex; the sides of the head and the mandibles with a long fringe of white pubescence; the face pubescent; a sharp tooth on the cheeks at the base of the mandibles. The thorax with white pubescence; the wings fulvo-hyaline, with a fuscous cloud at the apex of the marginal cell; the legs ferruginous, with the coxæ and base of the femora black. Abdomen: the apical ventral segment rounded, and having an acute spine in the middle.

Hab. Australia (Hunter River).

8. *ÆLURUS BASALIS*. Plate III. fig. 6 ♂.

B.M.

Male. Length 6 lines.—Black and punctured: the clypeus with a central smooth shining carina, the anterior margin shining and truncate; the mandibles ferruginous towards their apex, the tips black; the cheeks produced into a stout spine at the base of the mandibles, with a long fringe of pale pubescence. Thorax: the posterior margin of the prothorax rufo-testaceous; the wings hyaline, the nervures dark fuscous, the tegulæ ferruginous; the legs ferruginous, with the coxæ and base of the femora black. Abdomen subpetiolate, delicately and distantly punctured; the basal segment closely punctured, with a central longitudinal impressed line, its apical margin, the second segment, and the sides of the third ferruginous; the apical ventral segment with a short spine at the apex, emanating from an angular process, which has a minute tooth at its base.

Hab. Australia.

9. *ÆLURUS COMBUSTUS*.

B.M.

Male. Length $6\frac{1}{2}$ lines.—Black and punctured: the margin of the tubercles above the insertion of the antennæ, the clypeus anteriorly, and the margins of the face on each side rufo-testaceous; the mandibles ferruginous, with their inner margin testaceous; the face with long glittering pale pubescence; the mandibles and lateral margins of the head with a long fringe of pale pubescence; a spine on the cheeks at the base of the mandibles. Thorax: the anterior margin of the prothorax pale testaceous, the posterior margin rufo-testaceous; wings hyaline, their nervures dark fuscous, becoming ferruginous towards their base, the tegulæ ferruginous. Abdomen black above, with the sides and beneath ferruginous; the apical margins of the segments narrowly ferruginous; the apical ventral segment rounded, with a slender acute spine in the middle.

Hab. Australia (Moreton Bay).

10. *ÆLURUS PILOSULUS*.

Male. Length $5\frac{1}{2}$ –7 lines.—Black : the head and disk of the thorax clothed with fulvous pubescence, the sides of the head with a long curled fringe of the same colour, the pubescence becoming very pale in worn specimens ; the thorax beneath and the metathorax with cinereous pubescence ; the abdomen covered with changeable pile, in certain lights having a golden lustre. The mandibles and legs ferruginous, the coxæ black ; the cheeks produced into an acute tooth at the base of the mandibles ; the posterior margin of the prothorax more or less rufo-testaceous ; the wings hyaline, the nervures ferruginous ; the abdomen subpetiolate ; the apex with a short acute spine.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

11. *ÆLURUS RUBELLUS*.

Male. Length $4\frac{1}{2}$ lines.—Black : head and thorax rugose, the metathorax punctured ; the tips of the mandibles, the tibiae, the tarsi, and the apex of the femora more or less ferruginous ; the cheeks produced into an acute tooth at the base of the mandibles. The head and the thorax above with long fulvous pubescence ; the sides of the thorax and the metathorax with cinereous pubescence ; the wings hyaline, the nervures testaceous. Abdomen shining, subpetiolate, and with distant shallow punctures ; the basal segment with a deeply impressed longitudinal line in the middle, not extending to the apex of the segment ; the apical margin of the basal segment, the second, third, and base of the third at the sides, ferruginous ; sometimes the second segment and base of the third at the sides only, ferruginous ; beneath, the second, third, and sometimes the fourth, ferruginous ; the apical ventral segment with a deep notch on each side and a slighter one within, and having in the middle an acute spine curved upwards.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

12. *ÆLURUS FULVIFRONS*.

Male. Length 6 lines.—Black : the head and the mesothorax thinly covered with short fulvous pubescence, that on the cheeks, thorax beneath, and on the metathorax, cinereous ; the anterior margin of the clypeus and of the face on each side, and the mandibles, yellow. The margins of the prothorax, the tegulae, an ovate spot on the scutellum, and the post-scutellum, yellow ; the legs ferruginous, the coxæ and trochanters black ; the wings hyaline, the nervures dark fuscous. Abdomen subpetiolate, smooth and shining, with an ovate yellowish-white macula on

each side of the second, third, and fourth segments; the terminal ventral segment lanceolate, with a sharp spine at the apex.

Hab. S. Australia (Lower Plenty).

Female. Length 3 lines.—Rufo-fuscous: the antennæ, mandibles, and legs pale rufo-testaceous; the head smooth and shining; the second segment of the abdomen with four deep transverse grooves; the apical segment ferruginous. (Coll. R. Bakewell, Esq.)

13. *ÆLURUS BARBATUS.*

Male. Length 6 lines.—Black: head and thorax rugose and thinly covered with cinereous pubescence, the sides of the head with a long curled fringe of the same colour; the cheeks produced into a short spine at the base of the mandibles; behind the eyes is an obscure ferruginous stripe. Thorax: the tips of the femora, the tibiæ, and the tarsi ferruginous; the wings hyaline, with a slight fulvous tinge; a small fuscous cloud in the marginal cell. Abdomen subpetiolate and shining; the apical ventral segment rounded at the apex, and with a minute tooth in the middle.

Female. Length $3\frac{1}{2}$ lines.—Dark fusco-ferruginous: the head anteriorly, the mandibles, the thorax, legs, and two basal segments of the abdomen, rufo-testaceous, the mandibles and prothorax palest; the thorax closely punctured, the head more sparingly so. Abdomen finely rugose, with a smooth shining space at the base of the segments, the second segment transversely coarsely and irregularly striated.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

14. *ÆLURUS DENTATUS.*

Male. Length $5\frac{1}{2}$ lines.—Black: head and thorax rugose, the abdomen shining and subpunctate. Head transverse; the posterior margin of the vertex widely and very slightly emarginate; thinly covered with fulvous pubescence, the sides of the head with a long curled beard of the same; the mandibles ferruginous at their apex; close to their base the cheeks are produced into a short, stout, acute tooth. Thorax: the sides and beneath with griseous pubescence, on the disk it is slightly fulvous; wings hyaline, the nervures dark fuscous; the tibiæ and tarsi ferruginous. Abdomen subpetiolate; the basal segment with a central impressed line, not extending to the apex, and with a minute tooth on each side a little before the middle; the apical ventral segment truncate, with a short acute spine in the middle which emanates from a small truncate base.

Female. Length 4 lines.—The head, thorax, legs, and basal segment of the abdomen obscure blood-red, the rest of the abdomen black; the head, thorax, and base of the segments of the abdomen strongly punctured, the basal segment rugose.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

15. *ÆLURUS FERVENS*.

Male. Length $5\frac{1}{4}$ lines.—Black: the head and thorax closely punctured, the metathorax finely so; the abdomen shining, and covered with fine, very shallow punctures. The head and disk of the thorax with a pale fulvous pubescence, on the sides of the thorax and beneath it is cinereous. The anterior margin of the appendage, beneath which the antennæ are inserted, yellow; the clypeus anteriorly and the mandibles yellow, the latter ferruginous at their apex; the sides of the head with a long fringe of pale hairs. The anterior and posterior margins of the prothorax yellow, the yellow colour uniting in the middle; the tegulæ and post-scutellum yellow; wings hyaline, the marginal cell with a slight fuscous cloud; the legs ferruginous, with the coxæ and trochanters black. The apical ventral segment emarginate at the apex, with a central acute spine.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

Species of Brazil.

16. *ÆLURUS NASUTUS*. Plate III. fig. 7 ♀.

Ælurus nasutus, *Klug, Berl. Abhandl.* (1842) 43. 1. f. 11 ♂, 12 ♀.

Hab. Brazil.

17. *ÆLURUS CLYPEATUS*.

Ælurus clypeatus, *Klug, Berl. Abhandl.* (1842) 43. 2 ♂.

Hab. Brazil.

Genus 3. *ARIPHRON*.

Ariphron, *Erichs. Wieg. Arch.* (1842) p. 264.

1. *ARIPHRON BICOLOR*. Plate III. fig. 13 ♀.

Ariphron bicolor, *Erichs. Wieg. Arch.* (1842) 266. 239. t. 5. f. 8, 8a ♀.

Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

Notwithstanding the remarkable form of this insect, it is very

probable the discovery of the male will prove that it belongs to the genus *Elurus*: this observation may serve to direct attention to this probability.

Genus 4. ANTHOBOSCA.

Anthobosca, Guér. *Voy. Coq. Zool.* ii. 237 (1830).

Thynnus, pt., Klug, *Berl. Abhandl.* 29 (1840–42).

1. ANTHOBOSCA AUSTRALASIÆ.

Anthobosca Australasiæ, Guér. *Voy. Coq. Zool.* ii. 237, *Atlas*, *Ins.* pl. 8. fig. 10; *Mag. Zool.* (1842) *Mon. Thynn.* p. 13. pl. 104 (var.).

Thynnus Australasiæ, Klug, *Berl. Abhandl.* (1842) 24. 20 ♂.

Hab. Australia (Port Jackson).

2. ANTHOBOSCA NIGRA.

Male. Length $5\frac{1}{2}$ lines.—Black; slightly shining: head and thorax strongly punctured, the abdomen very delicately so; covered with a short downy cinereous pubescence, most sparing and shortest on the abdomen. Antennæ short and stout, not so long as the abdomen; the clypeus truncated anteriorly; wings very slightly coloured, the nervures black; the anterior tibiæ fulvous within, the calcaria pale testaceous; the abdomen slightly depressed above, the terminal segment with its upper and also its ventral plate rounded at the apex.

Hab. Australia (Port Philip).

3. ANTHOBOSCA VARIPES.

B.M.

Male. Length $4\frac{1}{2}$ –6 lines.—Black: the femora, tibiæ, and basal joints of the tarsi ferruginous, sometimes only the anterior tibiæ red within, sometimes entirely black; the calcaria and spines on the tarsi white, covered with a fine white, short, silky down; the head, thorax on the sides and beneath with longer cinereous pubescence; the antennæ stout, and shorter than the head and thorax, both the latter closely punctured; the wings hyaline, the nervures black. Abdomen delicately reticulated.

Hab. S. Australia (Lower Plenty).

4. ANTHOBOSCA CRABRONIFORMIS.

B.M.

Male. Length $5\frac{1}{2}$ lines.—Black: head and thorax very closely and finely punctured; the clypeus, mandibles, and inner orbits of the eyes yellow. Thorax: a large transverse bilobed macula on the prothorax, a spot on its side at the base of the anterior

10. *ÆLURUS PILOSULUS*.

Male. Length $5\frac{1}{2}$ –7 lines.—Black : the head and disk of the thorax clothed with fulvous pubescence, the sides of the head with a long curled fringe of the same colour, the pubescence becoming very pale in worn specimens ; the thorax beneath and the metathorax with cinereous pubescence ; the abdomen covered with changeable pile, in certain lights having a golden lustre. The mandibles and legs ferruginous, the coxæ black ; the cheeks produced into an acute tooth at the base of the mandibles ; the posterior margin of the prothorax more or less rufo-testaceous ; the wings hyaline, the nervures ferruginous ; the abdomen subpetiolate ; the apex with a short acute spine.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

11. *ÆLURUS RUBELLUS*.

Male. Length $4\frac{1}{2}$ lines.—Black : head and thorax rugose, the metathorax punctured ; the tips of the mandibles, the tibiae, the tarsi, and the apex of the femora more or less ferruginous ; the cheeks produced into an acute tooth at the base of the mandibles. The head and the thorax above with long fulvous pubescence ; the sides of the thorax and the metathorax with cinereous pubescence ; the wings hyaline, the nervures testaceous. Abdomen shining, subpetiolate, and with distant shallow punctures ; the basal segment with a deeply impressed longitudinal line in the middle, not extending to the apex of the segment ; the apical margin of the basal segment, the second, third, and base of the third at the sides, ferruginous ; sometimes the second segment and base of the third at the sides only, ferruginous ; beneath, the second, third, and sometimes the fourth, ferruginous ; the apical ventral segment with a deep notch on each side and a slighter one within, and having in the middle an acute spine curved upwards.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

12. *ÆLURUS FULVIFRONS*.

Male. Length 6 lines.—Black : the head and the mesothorax thinly covered with short fulvous pubescence, that on the cheeks, thorax beneath, and on the metathorax, cinereous ; the anterior margin of the clypeus and of the face on each side, and the mandibles, yellow. The margins of the prothorax, the tegulae, an ovate spot on the scutellum, and the post-scutellum, yellow ; the legs ferruginous, the coxæ and trochanters black ; the wings hyaline, the nervures dark fuscous. Abdomen subpetiolate, smooth and shining, with an ovate yellowish-white macula on

each side of the second, third, and fourth segments; the terminal ventral segment lanceolate, with a sharp spine at the apex.

Hab. S. Australia (Lower Plenty).

Female. Length 3 lines.—Rufo-fuscous: the antennæ, mandibles, and legs pale rufo-testaceous; the head smooth and shining; the second segment of the abdomen with four deep transverse grooves; the apical segment ferruginous. (Coll. R. Bakewell, Esq.)

13. *ÆLURUS BARBATUS.*

Male. Length 6 lines.—Black: head and thorax rugose and thinly covered with cinereous pubescence, the sides of the head with a long curled fringe of the same colour; the cheeks produced into a short spine at the base of the mandibles; behind the eyes is an obscure ferruginous stripe. Thorax: the tips of the femora, the tibiæ, and the tarsi ferruginous; the wings hyaline, with a slight fulvous tinge; a small fuscous cloud in the marginal cell. Abdomen subpetiolate and shining; the apical ventral segment rounded at the apex, and with a minute tooth in the middle.

Female. Length $3\frac{1}{4}$ lines.—Dark fusco-ferruginous: the head anteriorly, the mandibles, the thorax, legs, and two basal segments of the abdomen, rufo-testaceous, the mandibles and prothorax palest; the thorax closely punctured, the head more sparingly so. Abdomen finely rugose, with a smooth shining space at the base of the segments, the second segment transversely coarsely and irregularly striated.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

14. *ÆLURUS DENTATUS.*

Male. Length $5\frac{1}{4}$ lines.—Black: head and thorax rugose, the abdomen shining and subpunctate. Head transverse; the posterior margin of the vertex widely and very slightly emarginate; thinly covered with fulvous pubescence, the sides of the head with a long curled beard of the same; the mandibles ferruginous at their apex; close to their base the cheeks are produced into a short, stout, acute tooth. Thorax: the sides and beneath with griseous pubescence, on the disk it is slightly fulvous; wings hyaline, the nervures dark fuscous; the tibiæ and tarsi ferruginous. Abdomen subpetiolate; the basal segment with a central impressed line, not extending to the apex, and with a minute tooth on each side a little before the middle; the apical ventral segment truncate, with a short acute spine in the middle which emanates from a small truncate base.

9. RHAGIGASTER HÆMORRHOIDALIS.

B.M.

Rhagigaster hæmorrhoidalis, Guér. Mag. Zool. (1842) 2 ♂.*Hab.* Australia (Swan River).

10. RHAGIGASTER DIMIDIATUS.

Male. Length 9 lines.—Head, antennæ, thorax, anterior legs, and the intermediate and posterior coxæ, black; the intermediate and posterior tibiæ, tarsi, and femora, and also the abdomen, ferruginous; the head and thorax with a thin cinereous pubescence; the wings fusco-hyaline; the disk of the thorax transversely rugose; the abdomen with scattered shallow punctures; a transverse line on each segment a little before its apical margin, the intervening space very closely punctured; the terminal segment rounded at the apex and coarsely longitudinally rugose.

Female. Length 5 lines.—Black, elongate, with the intermediate and posterior legs, the anterior tarsi, and the two apical segments of the abdomen, ferruginous; the head, thorax, and basal segment of the abdomen with deep punctures, the second segment transversely and finely striated, the apical segment longitudinally striated.

Hab. Australia (Sydney).

11. RHAGIGASTER OBTUSUS.

Male. Length 8 lines.—Black, slightly shining, and thinly covered with griseous pubescence; head roughly punctured, the clypeus widely emarginate. Thorax roughly punctured; the prothorax with elongate transverse punctures, the anterior margin reflexed; the metathorax truncated, the truncation hollowed out on each side and transversely rugose; the disk very coarsely punctured; the wings subhyaline, the nervures black. Abdomen elongate, subcylindrical, strongly punctured; each segment has an impressed transverse line a little before the apical margin, the space between which and the margin is more finely and much more closely punctured; each segment with an oblique, smooth, shining elevation on each side; the apical segment rounded at the apex and longitudinally coarsely rugose.

Hab. Adelaide.

12. RHAGIGASTER REFLEXUS.

Male. Length 7 lines.—Black: the head and thorax with confluent punctures; head produced behind the eyes, rounded behind. Thorax oblong-quadrate, the sides before the wings parallel, the metathorax truncate; the disk of the thorax coarsely rugose; the anterior margin reflexed, produced laterally, and

subspinose; wings subhyaline, the nervures black. Abdomen truncate at the base, strongly punctured; the margins of the segments constricted.

Hab. Australia (Swan River).

13. RHAGIGASTER TRISTIS.

Male. Length 5 lines.—Black: head and thorax opaque, covered with confluent punctures; the clypeus truncate; the mesothorax with coarse deep punctures, those on the metathorax finer; the wings hyaline and iridescent, the nervures black. Abdomen shining, roughly punctured; the margins of the segments constricted; the apical segment with coarse punctures at the base, its apex smooth, shining, and rounded.

Hab. Western Australia.

14. RHAGIGASTER APICALIS.

B.M.

Male. Length 9 lines.—Black: the head and thorax coarsely rugose and subopaque; abdomen punctured and shining, the margins of the segments constricted, and the two apical segments red. The clypeus with a raised central carina, which runs upwards to the anterior stemma; at the base of the clypeus an oblique carina emanates on each side, running upwards to an irregular transverse one in front of the anterior stemma; the antennæ stout, and shorter than the thorax; wings hyaline, the nervures black; the sides of the prothorax parallel, its anterior margin slightly reflexed; the metathorax truncate.

Hab. Australia.

This species is similarly coloured to the *R. hæmorrhoidalis* of Guérin, but is much larger, and is readily distinguished by its carinated clypeus and truncated thorax.

15. RHAGIGASTER CASTANEUS.

Female. Length $3\frac{1}{2}$ lines.—Chestnut-red: the head shining, with scattered punctures, the face rugose. Thorax with large scattered punctures, the metathorax oblique; abdomen finely punctured.

Hab. Australia.

16. RHAGIGASTER NITIDUS.

Female. Length 4 lines.—Shining black, sparingly punctured: the face and antennæ obscurely ferruginous, the mandibles and legs bright ferruginous; the mesothorax with a deep depression

on each side, the metathorax with a shallow depression on each side; the apical segment bright ferruginous.

Hab. Australia.

Genus 6. TACHYPTERUS.

Tachypterus, Guér. *Voy. Coq. Zool.* ii. 216 (1830).

Psammatha, Shuck. *Trans. Ent. Soc.* ii. 68 (1837-40).

1. TACHYPTERUS FASCIATUS.

Tachypterus fasciatus, Guér. *Voy. Coq. Zool.* ii. 217.

Westw. Arc. Ent. ii. 102.

Hab. Australia (Kangaroo Island).

2. TACHYPTERUS CHALYBEUS.

Psammatha chalybea, Shuck. *Trans. Ent. Soc.* ii. 69. pl. 8. f. 1 ♂.

Westw. Arc. Ent. ii. 20. pl. 54. f. 5 ♂.

Tachypterus chalybæus, *Westw. Arc. Ent.* ii. 102.

Hab. Australia (Sydney).

3. TACHYPTERUS CRASSICORNIS. Plate III. fig. 10 ♂. B.M.

Male. Length 5 lines.—Black: the clypeus, the lower portion of the inner orbits of the eyes, the scape in front, the mandibles, palpi, the anterior coxæ and femora in front, and a line on the intermediate and posterior coxæ and trochanters, yellow; the antennæ incrassate, and about the length of the thorax. The wings hyaline and iridescent, the nervures dark testaceous, the stigma blackish; the legs ferruginous; the coxæ, trochanters, anterior and intermediate femora beneath, black; the intermediate and posterior tibiæ serrated exteriorly, the calcaria pale testaceous. Abdomen: the second, third, and extreme base of the fourth segment ferruginous; the abdomen covered with a short, changeable, silky cinereous pubescence; the head and thorax with longer pubescence of the same colour.

Hab. Australia.

The red colouring on the abdomen is more or less obliterated in different individuals; sometimes only the posterior margins of the segments are red or rufo-piceous.

Genus 7. ONCORHINUS.

Oncorhinus, Shuck. *Grey's Journ. Exped. King George's Sound, Append.* ii. 471.

1. ONCORHINUS XANTHOSPILOS. Plate III. fig. 15 ♂.

Oncorhinus xanthospilos, *Shuck. Grey's Journ. Exped. King George's Sound, Append. ii. 471* ♂.

Hab. Australia (King George's Sound).

Genus 8. DIAMMA.

Diamma, *Westw. Proc. Zool. Soc. pt. 3 (1835) p. 53* ♀.

1. DIAMMA BICOLOR.

Diamma bicolor, *Westw. Proc. Zool. Soc. pt. 3. (1835) p. 53* ♀;
Arc. Ent. ii. 21. pl. 54. f. 6 ♀.

Guér. Voy. Coq. Zool. ii. 235.

Hab. Australia; Van Diemen's Land.

Genus 9. ISWARA.

Iswara, *Westw. Trans. Ent. Soc. Lond. n. s. i.*

1. ISWARA LUTEUS.

Iswara luteus, *Westw. Trans. Ent. Soc. Lond. n. s. i. pl. 7. fig. 5.*
and details.

Hab. India.

THYNNUS PULCHRALIS.

Male. Length $7-7\frac{1}{2}$ lines.—Head and thorax yellow; the vertex and thorax with a fulvous tinge above, the mesothorax black at the sides and beneath; the six basal joints of the antennæ ferruginous, the scape with a yellow spot in front; the mandibles rufo-piceous at their apex. The anterior tibiae and tarsi ferruginous, and the femora with a yellow stripe at their apex beneath; the wings hyaline, with their base brown. Abdomen black and shining; the base and four basal segments yellow above, with the sides above each in succession blacker to the fourth, the third and fourth with also a pale yellow spot, a tinge of fulvous colour on the three basal segments; beneath, the basal segment has a triangular white spot in the middle; the second segment is white, with a black spot in the middle of its base; the third segment with a transverse white spot on each side of its apical margin; the fourth segment with two minute spots at its apical margin.

Hab. Adelaide.

THYNNUS (AGRIOMYIA) TRYPHONOIDES.

Female. Length 3 lines.—Ferruginous, shining, the head sparingly punctured; the prothorax deeply excavated above; the metathorax transverse and abruptly truncate; the abdomen delicately punctured.

Hab. Adelaide.

The male of this species is described at p. 34.

THYNNUS (AGRIOMYIA) FLAVESCENS.

Male. Length $4\frac{1}{2}$ lines.—Head black; the orbits of the eyes, a V-shaped mark between the antennæ, the clypeus and mandibles, yellow. Thorax yellow; three black spots on the prothorax; a broad stripe on each side of the mesothorax, a bilobed spot in front, a large spot beneath the wings, and the pectus, black; the scutellum and metathorax yellow, both black at the base, the latter has also a black spot in the middle; the tibiae and femora ferruginous, with the tarsi dusky; wings hyaline, the nervures black. The abdomen yellow, with a black band at the base of the segments, which is produced into an angular point in the middle; each segment has also a short narrow transverse line on each side; the black band broadest on the apical segments.

Female. Length $2\frac{1}{2}$ lines.—Yellow, with the head obscure rufo-fuscous; the metathorax black, transverse, with its margins

rounded. The apical margins of the first and second segments of the abdomen elevated into sharp carinæ, also a sharp transverse carina in the middle of the second segment.

Hab. Adelaide.

ÆLURUS INCANUS.

Female. Length $4\frac{1}{2}$ lines.—Black, closely punctured; the vertex shining and sparingly punctured; the antennæ and legs ferruginous; thinly sprinkled with erect glittering hairs; the thorax deeply constricted in the middle; the metathorax obliquely truncate, closely punctured and subopaque; the terminal segment of the abdomen acute at its apex, which is pale testaceous, and thickly covered with fulvous hairs.

Hab. Adelaide.

The male of this species is described at p. 53.

RHAGIGASTER COMPARATUS.

Male. Length 5 lines.—Black: head and thorax coarsely rugose; the abdomen closely punctured, each segment with an oblique shining impunctate raised space on each side; the two apical segments ferruginous, and not so closely punctured as the preceding; covered with a scattered griseous pubescence; the wings hyaline, the nervures black; the tibiæ and tarsi obscure ferruginous; the segments of the abdomen constricted.

Female. Length $3\frac{1}{2}$ lines.—Black, elongate and narrow, strongly punctured; the antennæ, legs, and two apical segments of the abdomen ferruginous; the thorax rounded anteriorly; the metathorax narrowed at its base and obliquely truncate at the apex.

Hab. Adelaide.

This species very closely resembles *R. hæmorrhoidalis*; but in that species the apical margin of the terminal segment of the abdomen is deeply emarginate in the middle, in the present species it is rounded and entire; the legs are also of a different colour.

PLATE II. (*continued*).

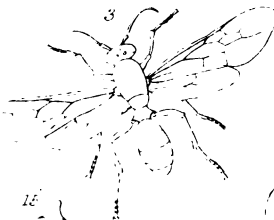
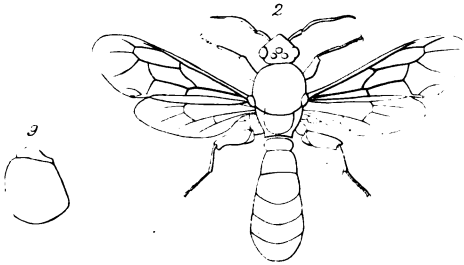
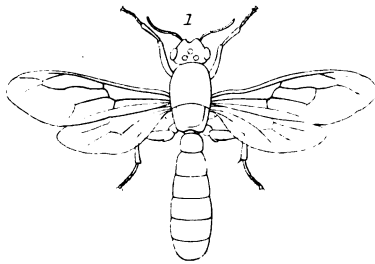
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|--|---|
| Fig. | Fig. |
| 12a. Node of the abdomen of <i>Labidus Halidaii</i> . | 15a. <i>Ænictus inconspicuus</i> . |
| 13. Anterior wing of <i>Labidus morosus</i> . | b. Antennæ of ditto. |
| 13a. Node of the abdomen of <i>Labidus morosus</i> . | c. Node of the abdomen of ditto. |
| 14. Anterior wing of <i>Labidus amplipennis</i> . | 16. Node of the abdomen of <i>Ænictus ambiguus</i> . |
| 14a. Node of the abdomen of <i>Labidus amplipennis</i> . | 17. Node of the abdomen of <i>Ænictus pubescens</i> . |

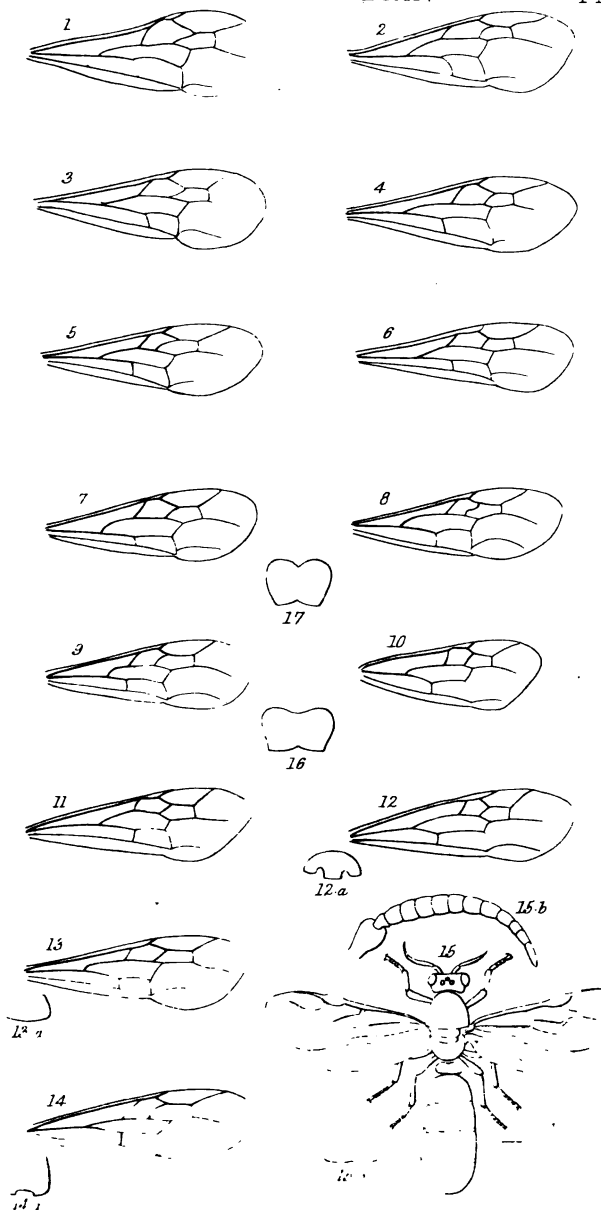
PLATE III.

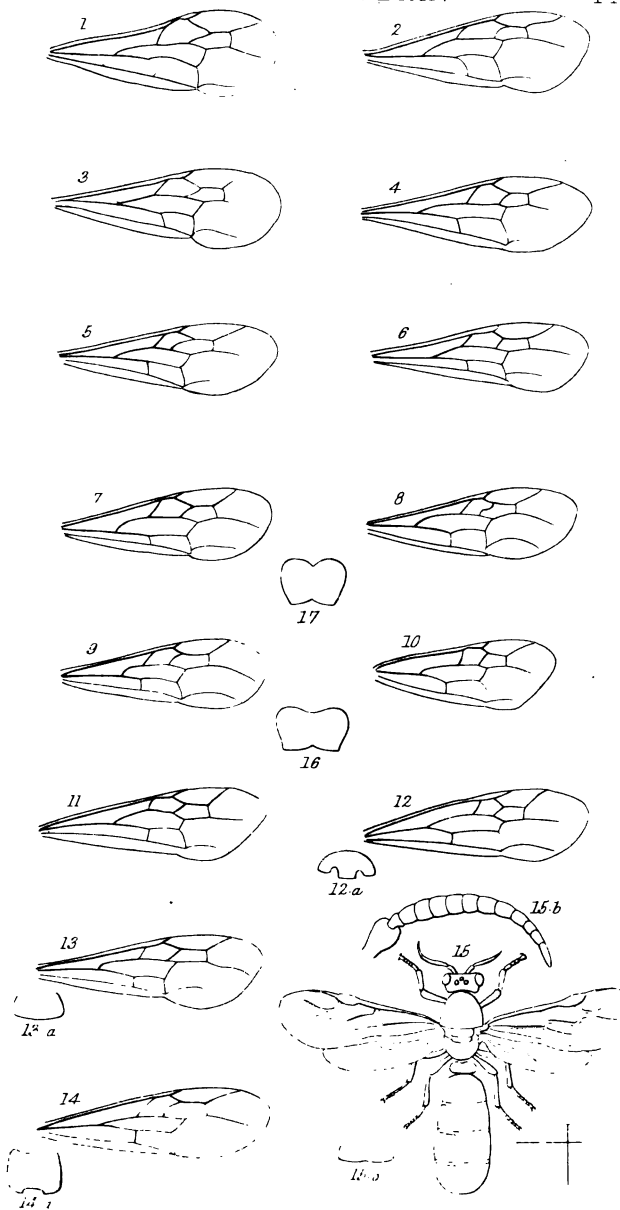
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|---|--|
| 1. <i>Thynnus variabilis</i> ♂. | 9. Maxillary palpi of <i>Ælurus clypeatus</i> . |
| 2. <i>Thynnus variabilis</i> ♀. | 10. <i>Tachypterus crassicornis</i> ♂. |
| 3. Labial palpi of <i>Thynnus variabilis</i> . | 11. Labial palpi of <i>Ælurus clypeatus</i> . |
| 4. Maxillary palpi of <i>Thynnus variabilis</i> . | 12. Maxillary palpi of <i>Ælurus clypeatus</i> . |
| 5. Anterior wing of <i>Anthobosca</i> . | 13. <i>Ariphron bicolor</i> ♀. |
| 6. <i>Ælurus basalis</i> ♂. | 14. Wing of <i>Rhagigaster</i> . |
| 7. <i>Ælurus nasutus</i> ♀. | 15. <i>Oncorhinus xanthospilos</i> ♂. |
| 8. Labial palpi of <i>Ælurus clypeatus</i> . | 16. <i>Thynnus (Agriomyia) hæmatodes</i> ♂. |

HYMENOPTERA.

Pl. I.



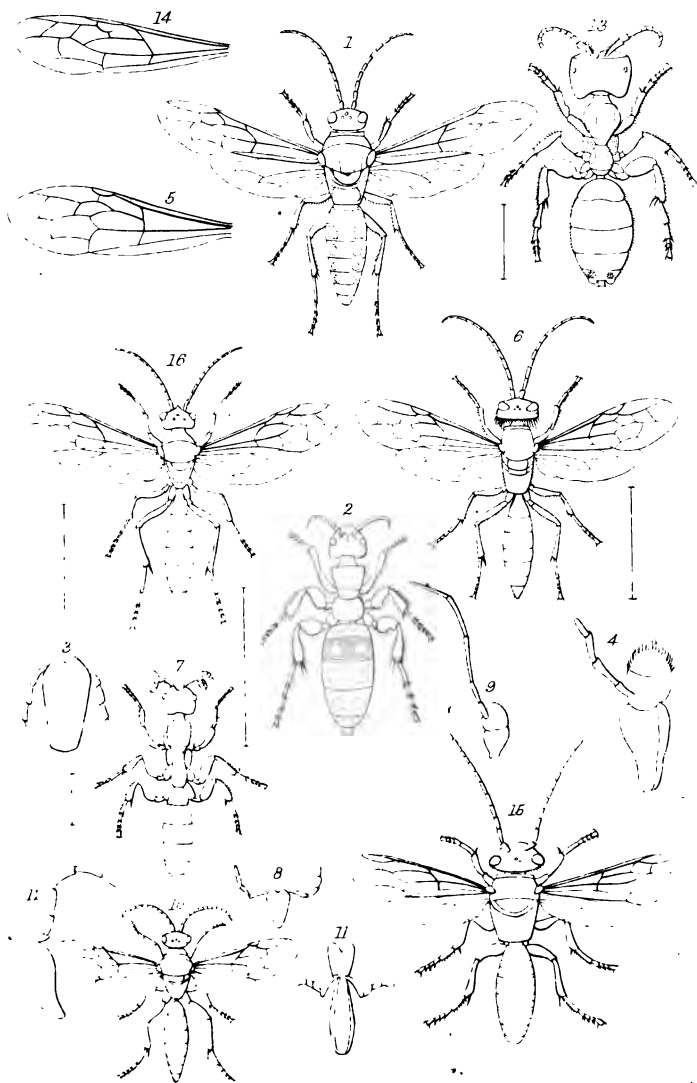




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